St. Joseph's Family Practice Refresher

What's new and what bears repeating in the breast and endocrine world

Kara C Kort MD FACS , Medical Director Breast Care and General Surgery March 2023

To cover

A little bit about a lot

- Thyroid nodules and thyroid cancer - super common , happy to help sort out
- More precise testing of these nodules to avoid surgery
- Classic hyperparathyroidism and tricky cases (even for me) and some real patient examples
- Recent controversies in town with breast imaging and biopsies
- Breast Cancer and Obesity - can we as physicians help ?
- Newer literature on genetic mutation carriers and bilateral mastectomies

- Quickly again on hyperthyroidism and subclinical hyperthyroidism
- Post menopausal HRT - what does the NEWER data show
- Our new BIRADS - 3 protocol
- Outpatient mastectomies

Journal of the American College of Radiology

Volume 17, Issue 4, April 2020,

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Original article

Health Services Research and Policy

Factors Associated With Optimal Follow-up in Women With BI-RADS 3 Breast Findings

Ronilda Lacson MD, PhD [a, b], Aijia Wang MPH [a], Laila Cochon MD, PhD [a], Catherine Giess MD [a, b], Sonali Desai MD [b, c], Sunil Eappen MD [b, d], Ramin Khorasani MD, MPH [a, b]

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Abstract

Objective

Assess rate of and factors associated with optimal follow-up in patients with BI-RADS 3 breast findings.

Methods

This Institutional Review Board–approved, retrospective cohort study, performed at an academic medical center, included all women undergoing breast imaging (ultrasound and mammography) in 2016. Index reports for unique patients with an assessment of BI-RADS 3 (retrieved via natural language processing) comprised the study population. Patient-specific and provider-related features were extracted from the Research Data Warehouse. The Institutional Cancer Registry identified patients diagnosed with breast cancer. Optimal follow-up rate was calculated as patients with follow-up imaging on the same breast 3 to 9 months from the index examination among patients with BI-RADS 3 assessments. Univariate analysis and multivariable logistic regression determined features associated with optimal follow-up. Malignancy rate and time to malignancy detection were recorded.

Results

Among 93,685 breast imaging examinations, 64,771 were from unique patients of which 2,967 had BI-RADS 3 findings (4.6%). Excluding patients with off-site index examinations and those with another breast examination <3 months from the index, 1,125 of 1,511 patients (74%) had optimal follow-up. In univariate and multivariable analysis, prior breast cancer was associated with optimal follow-up; younger age, Hispanic ethnicity, divorced status, and lack of insurance were associated with not having optimal follow-up. Malignancy rate was 0.86%, and mean time to detection was 330 days.

Discussion

Follow-up of BI-RADS 3 breast imaging findings is optimal in only 74% of women. Further interventions to promote follow-up should target younger, unmarried women, those with Hispanic ethnicity, and women without history of breast cancer and without insurance coverage.

What we are doing …

Save patients time and anxiety

- Many many referrals for BIRADS - 3 finding on imaging
- Large percentage referred for Breast Surgical consultation and many requesting surgeon only
- 99.9% of time we will agree and recommend 6 month follow up as well and bring patient back to have done with us and see same visit
- Now often review upon referral request, and if agree with 6 month follow up bring in FOR that 6 month imaging study IN 6 months to see us
- Navigator calls , reassures we have reviewed etc and we set up imaging and visit

Breast Imaging Abuse and Misuse

BI-RADS CATEGORIES
BI-RADS 0 (incomplete): Recommend additional imaging -- mammogram or targeted ultrasound
BI-RADS 1 (negative): Routine breast MR screening if cumulative lifetime risk ≥ 20%
BI-RADS 2 (benign): Routine breast MR screening if cumulative lifetime risk ≥ 20%
BI-RADS 3 (probably benign): Short-interval (6-month) follow-up
BI-RADS 4 (suspicious): Tissue diagnosis
BI-RADS 5 (highly suggestive of malignancy): Tissue diagnosis
BI-RADS 6 (known biopsy-proven malignancy): Surgical excision when clinically appropriate

8. ***A screening mammography examination received an "Incomplete" (BI-RADS® category 0) assessment due to an asymmetry. The subsequent diagnostic mammography examination is also assessed as BI-RADS® category 0, recommending additional US examination. A US examination then is performed showing no abnormal findings, but I want to further evaluate this patient with MRI, which occasionally depicts a cancer not seen at either mammography or US. Is it appropriate to also assess the US examination as BI-RADS® category 0, recommend additional MRI examination?***

This question involves two non-recommended uses of BI-RADS® category 0. First, with few uncommon exceptions, category 0 should not be used for diagnostic mammography examinations. Therefore, if diagnostic mammography is performed concurrently with US, an overall BI-RADS® assessment category should be given (rather than a category 0 assessment for the mammography followed by a final assessment for the US). The overall assessment would depend on the mammographic and sonographic findings and whether these are or are not described in the diagnostic breast imaging report. Refer to the following examples.

- If no findings are described in either the mammography or US portions of a combined report, the appropriate overall assessment is negative (BI-RADS® category 1).
- If one or more specific benign findings are described in either the mammography or US portions of a combined report, the appropriate overall assessment is benign (BI-RADS® category 2).
- If diagnostic mammography depicts a focal asymmetry with no associated mass, calcifications, or architectural distortion; if there is no sonographic or palpable correlate to the mammographic finding; and if there are no prior mammography examinations available for comparison, it may be appropriate to render a probably benign (BI-RADS® category 3) assessment.
- If diagnostic mammography indicates the presence of a suspicious abnormality despite absence of a sonographic correlate (or vice versa), the appropriate overall assessment is suspicious (BI-RADS® category 4).

Second, BI-RADS® category 0 ***should not be used for diagnostic breast imaging findings that warrant further evaluation with MRI.*** Rather, the radiologist should issue a final assessment for the combined diagnostic mammography and US examinations in a report that is made ***before*** the MRI is performed. If further evaluation with MRI is warranted, the radiologist should incorporate this recommendation into the patient management recommendations in the combined mammography/US report. This provides the following advantages:

- If the recommended MRI examination is not performed, the combined diagnostic breast imaging report will stand as issued.
- If MRI is performed as recommended, it would not be necessary to re-interpret the mammography and US examinations. A negative or benign MRI assessment would sustain a similar assessment made at diagnostic mammography and US. If the MRI examination shows more abnormal findings than those identified at mammography and US, the MRI assessment would supersede that made for mammography and US.

Also note that breast MRI is not appropriate follow-up in many situations, including:

- Instead of biopsy of a suspicious finding at mammography and/or US.
- As an alternative to short-interval follow-up of probably benign findings at mammography and/or US.

CLINICAL INFORMATION: screening

GAIL RISK ASSESSMENT: 10.7 %

LAST CLINICAL BREAST EXAM: Unknown

COMPARISON: Previous imaging unavailable at this time.

TECHNIQUE: Craniocaudal and oblique lateral views of the breasts were obtained.

DENSITY: The breasts are composed of scattered fibroglandular densities.

FINDINGS: Scattered fibroglandular parenchyma noted. There are subcentimeter scattered areas of nodularity seen likely of benign etiology. No prior examinations available for comparison to confirm stability. Architectural distortion or clustered microcalcifications not seen.

IMPRESSION: Heterogeneous parenchyma noted limiting sensitivity of mammography. Suspicious mass not seen but areas of nodularity likely benign etiology noted requiring additional evaluation with sonography. Bilateral breast ultrasonography recommended.

BIRADS: BI-RADs 0 - Additional Imaging Needed

This mammogram was performed digitally and interpreted with the aid of CAD technology.

1. A negative x-ray report should not delay biopsy if a clinically suspicious mass is present.
Some cancers are not identified by x-ray.

2. Adenosis and dense breasts may obscure an underlying neoplasm. Such patients should be
followed more closely.

EXAMINATION: US BREAST BILATERAL LIMITED TARGETED EXAM

CLINICAL INFORMATION: call back

COMPARISON: 12/7/22 Mammogram.

FINDINGS:

Sonography of bilateral breasts was performed. There is no focal solid or cystic lesion identified in either breast parenchyma.

IMPRESSION:

SONOGRAPHIC EVIDENCE OF MALIGNANCY NOT SEEN IN THE LEFT OR RIGHT BREAST. THERE IS NO SUSPICIOUS SONOGRAPHIC FINDING THAT WOULD CORRESPOND TO BENIGN-APPEARING AREAS OF MAMMOGRAPHIC FINDINGS.

FOLLOW-up with breast MRI recommended to more definitively exclude malignancy given limitations of mammography due to dense heterogeneous breast parenchyma and mammographic findings raising consideration for a small breast nodule foci.

BI-RADs: BI-RADs 0 - Additional imaging needed

Report Electronically Signed by:Kirwin Gibbs
Report Signed on:12/16/2022 11:07 AM

ACCT: V00007694463
O.V.#:

RPT#: 0123-0136

MRI BREAST WO/W CONT BILATERAL
ITS629293-23
Dx: UNSPECIFIED LUMP IN UNSPECIFIED BREAST
Order Phy: Roggie,Heidi J. NP

Date/Time:01/20/23 0806

EXAM: MRI BREAST WO/W CONT BILATERAL

HISTORY: UNSPECIFIED LUMP IN UNSPECIFIED BREAST

COMPARISON: None available. An outside mammogram of 12/7/2022 and outside bilateral breast sonogram of 12/16/2022 are available for review.

TECHNIQUE: MRI of bilateral breasts is obtained before and after the administration of intravenous contrast. 20 ml of Clariscan was injected.

FINDINGS: There is no stellate shaped enhancing mass to suggest MR evidence of malignancy. There are a few small/tiny nodular areas with increased but benign-appearing blood flow noted mostly in the left breast best appreciated in the 3 o'clock position of the left breast 2.3 cm and 2.7 cm from the nipple. Directed sonography and short-term follow-up MRI in 6 months is suggested.

There is asymmetric nonmasslike parenchymal appearing Blood flow demonstrated to the right breast.

IMPRESSION: NO DEFINITIVE MR EVIDENCE OF MALIGNANCY AS FULLY DESCRIBED AND DISCUSSED ABOVE. THERE ARE A FEW SMALL BENIGN-APPEARING NODULES NOTED MOSTLY IN THE LEFT BREAST AND DIRECTED ULTRASOUND AND SHORT-TERM FOLLOW-UP MRI IS SUGGESTED.

BI-RADS 3

"This document may have been dictated using voice recognition software. Although each note is reviewed to minimize errors, unintended translation errors can occur. Please call your provider's office if you have any questions about the content of this note. Thank you."

DICTATED BY: Andrew Lewis, MD 01/20/23 1028

Electronically Signed By: Andrew Lewis, MD 01/23/23 1405

Electronically Co-Signed By:

Patient MC

38 yr old female , 7 month pregnant with second child

- During pregnancy notes a mass in breast
- Has US that describes small slightly suspicious mass , recommend 6 month follow up
- 6 month later , post partum , repeat US mass still slightly suspicious , recommend 6 month follow up
- Shortly thereafter while breast feeding notices nipple retraction , baby having hard time latching …

Ultrasound guided fine-needle aspiration left breast 3 o'clock location laterally, fine-needle aspiration left breast 3 o'clock location periareolar, fine-needle aspiration lymph nodes enlarged left axilla.

CLINICAL HISTORY AND CONSENT:
The patient is breast feeding. She has had 2 lesions with calcifications somewhat irregular, wider than tall sustaining slight enlargement in the past 6 months. The largest lesion is now 9 x 8 x 7 mm. The smaller lesion 6 x 6 x 4 mm.

On today's exam there abnormal lymph nodes left axilla. They will be aspirated as well. The patient is aware and consents.

The patient consents to the fine needle aspiration understanding the unlikely possibility of bleeding, infection or allergy. Alternatives such a no aspiration with sonographic surveillance were discussed and a consent form was signed.

COMPARISON:
None.

TECHNIQUE:
Fine-needle aspiration left breast 3 o'clock location laterally: With ultrasound guidance after preparing the skin with alcohol a 22 gauge needle is inserted into the lesion and a thorough aspiration follows. The sample is placed into cytolyte. A new 22 gauge needle/syringe combination is selected and with ultrasound guidance the same lesion is aspirated again. This sample is placed into the same cytolyte vial and sent for pathologic analysis.

Fine-needle aspiration left breast 3 o'clock location periareolar: Skin prepared with alcohol. Under ultrasound guidance a 22 gauge needle enters the nodule and aspiration follows. Sample placed into CytoLyt. Under ultrasound guidance 22 gauge needle inserted into the same nodule again

Physician(s): KARA KORT MD

Copy To:

Specimen(s) Received

A: Slide Consult, 1 slide received from Lab Corp.

Clinical Diagnosis and History

Diagnosis

BREAST, LEFT, "PERIOR", FINE NEEDLE ASPIRATION (LAB CORP SYRACUSE, 294-C13-0087, 10/20/2022):

ATYPICAL DUCTAL CELLS PRESENT, CONSISTENT WITH DUCTAL CARCINOMA, EITHER INVASIVE OR IN SITU.

Gross Description

Received for review is one slide from Labcorp Syracuse labeled with the patient's name and case number 294-C13-0087. The slide consists of an H&E stained cell block.

Physician(s): KARA KORT MD

Copy To:

Specimen(s) Received

A: Slide Consult, 1 slide received from Lab Corp.

Clinical Diagnosis and History

Diagnosis

BREAST, LEFT, LATERAL, FINE NEEDLE ASPIRATION (LABCORP SYRACUSE, 294-C13-0086, 10/20/2022):

ATYPICAL DUCTAL CELLS PRESENT, CONSISTENT WITH DUCTAL CARCINOMA (EITHER INVASIVE OR IN SITU).

Gross Description

Received for review from Labcorp Syracuse is one slide labeled with the patient's name and case number 294-C13-0086. The slide consists of an H&E stained cell block.

Physician(s): KARA KORT MD

Copy To:

Specimen(s) Received

A: Slide Consult, 1 slide received from Lab Corp.

Clinical Diagnosis and History

Diagnosis

LEFT AXILLA, FINE NEEDLE ASPIRATION (LABCORP SYRACUSE, 294-C13-0088, 10/20/2022):

POSITIVE FOR CARCINOMA CONSISTENT WITH METASTATIC BREAST CARCINOMA.

THERE IS A BACKGROUND OF SMALL LYMPHOCYTES.

THE CELLS HAVE A SIMILAR APPEARANCE TO THE CARCINOMA CELLS SEEN IN THE LEFT BREAST ASPIRATION SPECIMENS (JS23-399 AND JS23-400). SEE ALSO THE FOLLOW UP LEFT AXILLA CORE BIOPSY SPECIMEN CS22-2850.

Gross Description

Received for review is one slide from Labcorp Syracuse labeled with the patient's name and case number 294-C13-0088. The slide consists of an H&E stained cell block.

MRI shows *extensive* cancer with positive lymph nodes

FINDINGS:
Left breast: Core biopsy outer left breast today. Extreme mammographically annular tissue. Lymph nodes left axilla 1.8 and 1.5 cm in size. These were positive for neoplasm at FNA last week. On the background of significant glandular tissue there is multifocal abnormal enhancement spreading throughout much of the left breast. Multifocal abnormal enhancement upper-outer quadrant left breast. There are multiple areas of abnormal enhancement 2 cm in size. The largest area of abnormal enhancement is approximately 4 x 2 cm in size deep in the upper-outer quadrant left breast. The areas of sonographic abnormality which are smaller are the tip of the ice berg.

Right breast: Extreme mammographic glandular tissue. No lymphadenopathy. On the background of dense significant glandular tissue there is no definite focal abnormal enhancement or neoplasm. Some of the significant glandular tissue upper outer right breast far laterally near the chest wall appears somewhat rounded in configuration but no distinct malignant features.

IMPRESSION:
Extremely significant dense glandular tissue with profound background enhancement each breast complicates interpretation.

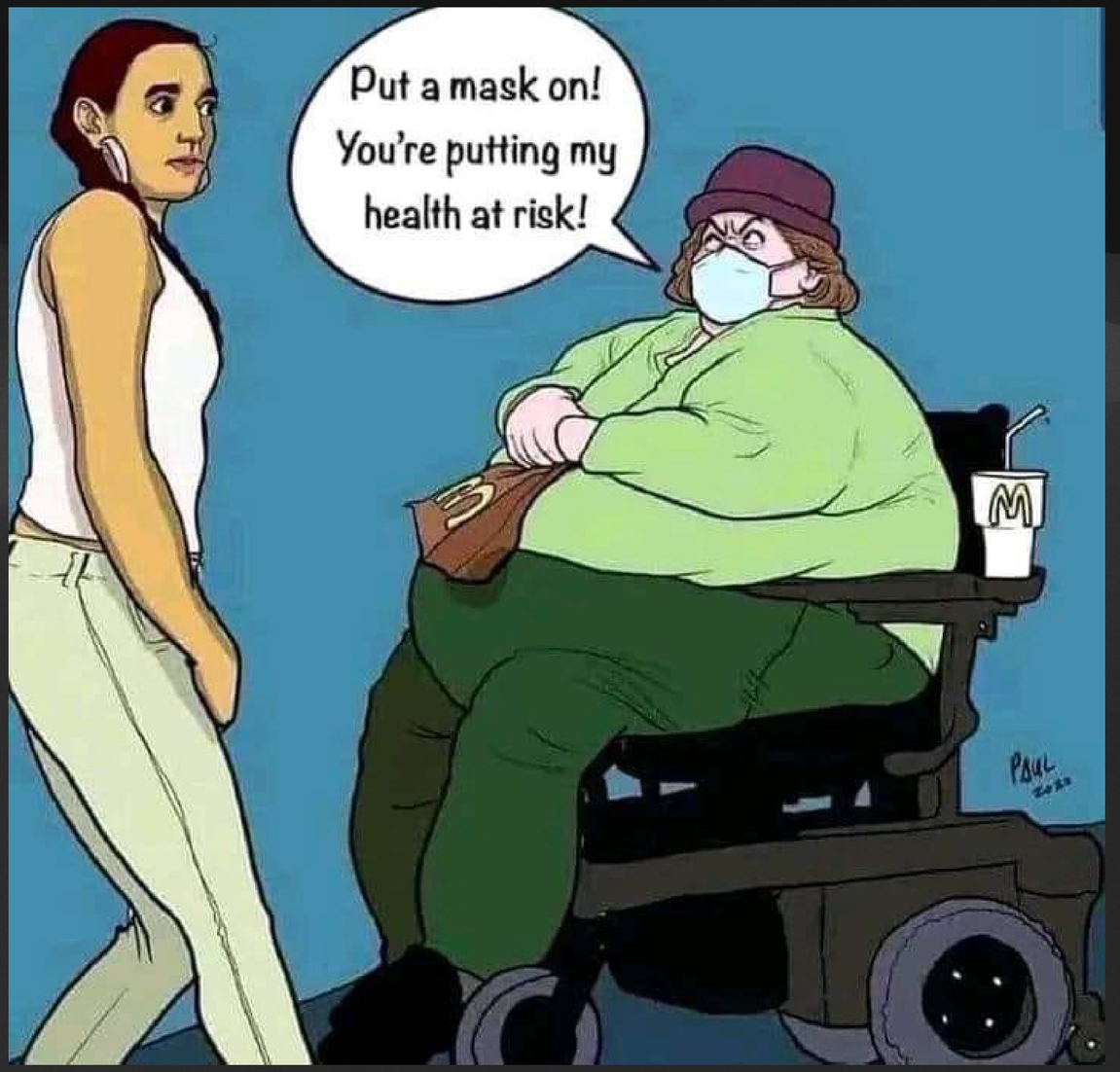
Given that finding no definite abnormal enhancement right breast and no adenopathy right axilla. Mammogram and sonogram on the right were negative today.

Left breast has multifocal areas of abnormal enhancement superimposed upon significant glandular enhancement. Many areas are 2-3 cm in size throughout much of the outer left breast. In aggregate, the largest area of abnormality left upper outer quadrant with abnormal enhancement is 4 x 2 cm in size. There are 2 lymph nodes left axilla approaching 2 cm in size which are abnormal and were aspirated recently.

Breast Cancer and Obesity

It is real - what can we do to help

- Personal observations



Seminars in Cancer Biology
Volume 60, February 2020, Pages 274-284

The weight of obesity in breast cancer progression and metastasis: Clinical and molecular perspectives

Ines Barone [a], Cinzia Giordano [a, b], Daniela Bonofiglio [a], Sebastiano Andò [a, b, 1], Stefania Catalano [a, 1]

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https://doi.org/10.1016/j.semcancer.2019.09.001

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Article | Open Access | Published: 02 October 2019

Obesity and survival among a cohort of breast cancer patients is partially mediated by tumor characteristics

Cindy K. Blair, Charles L. Wiggins, Andrea M. Nibbe, Curt B. Storlie, Eric R. Prossnitz, Melanie Royce, Lesley C. Lomo & Deirdre A. Hill

npj Breast Cancer **5**, Article number: 33 (2019) | Cite this article

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Chapter 11: Obesity and Benign and Malignant Disease of the Breast

Kara C. Kort; Scott P. Albert; Ravi Adhikary

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Full Chapter Figures

INTRODUCTION

While the epidemic of obesity in this country has well-known detrimental effects on the cardiovascular system and increased problems with arthritis and diabetes, its effect on the female breast has only more recently been realized. This chapter

Original Articles

Breast Cancer and Obesity: An Update

Gina Day Stephenson & David P. Rose

Pages 1-16 | Published online: 18 Nov 2009

Download citation https://doi.org/10.1207/S15327914NC4501_1

OBESITY Reviews
WORLD OBESITY

Obesity and prognosis of breast cancer

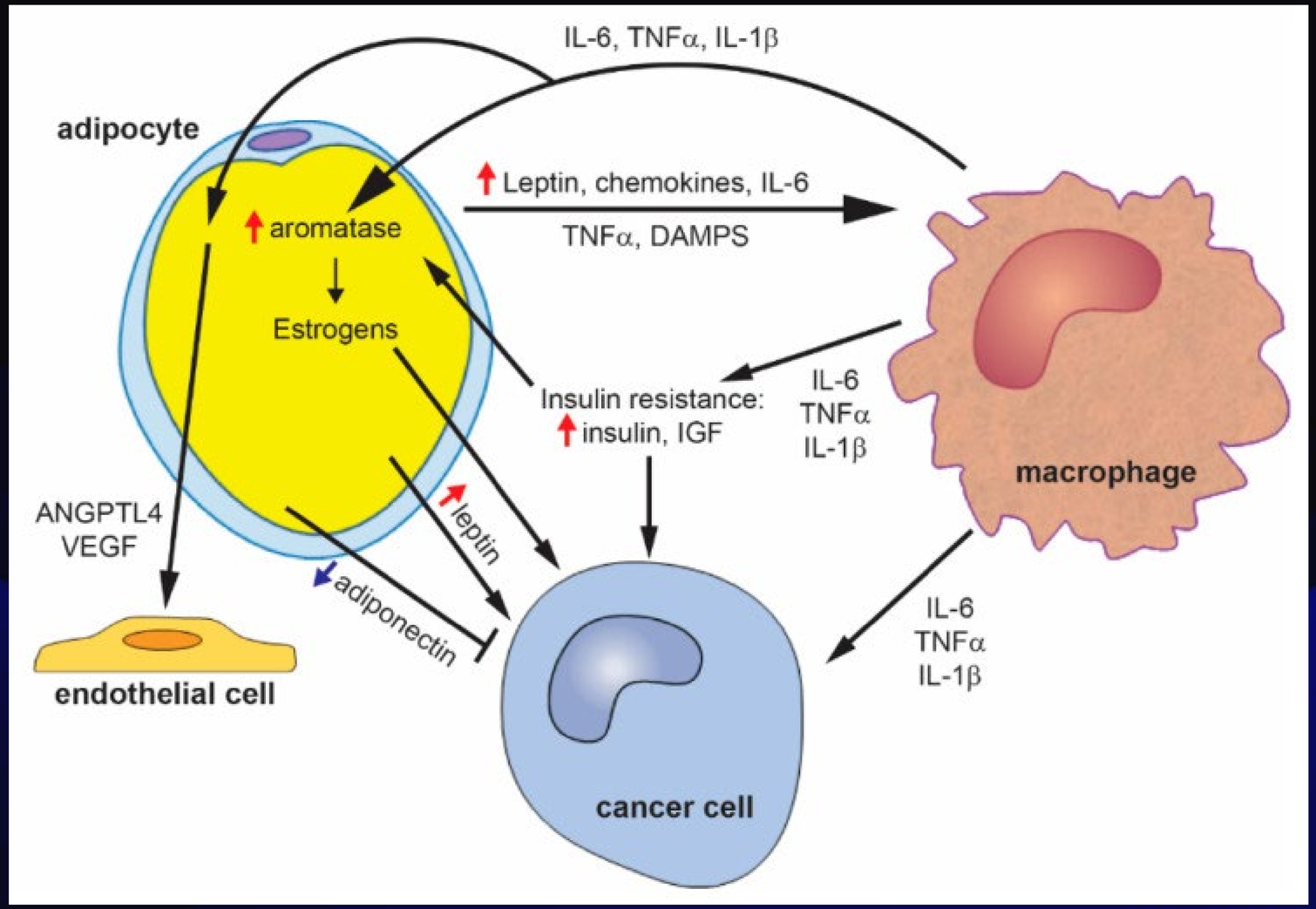
A. R. Carmichael

First published: 11 August 2006 | https://doi.org/10.1111/j.1467-789X.2006.00261.x | Citations: 179

AR Carmichael, Consultant Surgeon, Russells Hall Hospital, Dudley, DY1 2HQ, UK. E-mail: homepac@doctors.org.uk

Summary

Obesity has a complicated relationship to both breast cancer risk and the clinical behaviour of the established disease. It is suggested that obesity is associated with both an increased risk of developing breast cancer risk and worse prognosis after disease onset. In post-menopausal women, various measures of obesity such as body mass index, weight, weight gain and waist : hip ratio have all been positively associated with risk of developing breast cancer. In most but not all case–control and prospective cohort studies, an inverse relationship has been found between weight and breast cancer among pre-menopausal women. Some data suggest that adult weight gain and central obesity increase the risk of pre-menopausal breast cancer. Obesity at the time of diagnosis is thought to be significant as a poor prognostic factor. Obesity is associated with adverse outcomes in both pre- and post-menopausal women with breast cancer. Many cancer survivors seek ways to minimize the risk of recurrence and death because of breast cancer. Despite complex and at times controversial data, enough evidence is available at present to suggest that weight management should be a part of the strategy to prevent the occurrence, recurrence and death because of breast cancer. In this review the effect of obesity on the prognosis of breast cancer is examined in detail.



Cancers (Basel). 2020 Jun; 12(6): 1686.

Increased aromatase - increased estrogen
Increased growth factors
Increased leptin

- Obesity is associated with an increased risk of estrogen receptor positive breast cancer in post menopausal women
- Obesity in premenopausal women is linked to an increased risk of TNBC (triple negative BC)
- A worse prognosis for all breast cancer subtypes regardless of menopausal status

- Obesity is associated with an increased risk of distant recurrence after 5-10 yrs
- Obesity has been shown to be associated with and increased risk of developing a secondary malignancy - contralateral breast or other site

Ewertz M., Gray K.P., Regan M.M., Ejlertsen B., Price K.N., Thürlimann B., Bonnefoi H., Forbes J.F., Paridaens R.J., Rabaglio M., et al. Obesity and risk of recu

Neuhouser M.L., Aragaki A.K., Prentice R.L., Manson J.E., Chlebowski R., Carty C.L., Ochs-Balcom H.M., Thomson C.A., Caan B.J., Tinker L.F., et al. Overweight, o

Vona-Davis L., Rose D.P., Hazard H., Howard-McNatt M., Adkins F., Partin J., Hobbs G. Triple-negative breast cancer and obesity in a rural Appalachian population. Cancer Epidemiol. Biomarkers Prev. 2008;17:3319–3324.

Keum N., Greenwood D.C., Lee D.H., Kim R., Aune D., Ju W., Hu F.B., Giovannucci E.L. Adult weight gain and adiposity-related cancers: A dose-response met

Eliassen A.H., Colditz G.A., Rosner B., Willett W.C., Hankinson S.E. Adult weight change and risk of postmenopausal breast cancer. JAMA. 2006;296:193–201

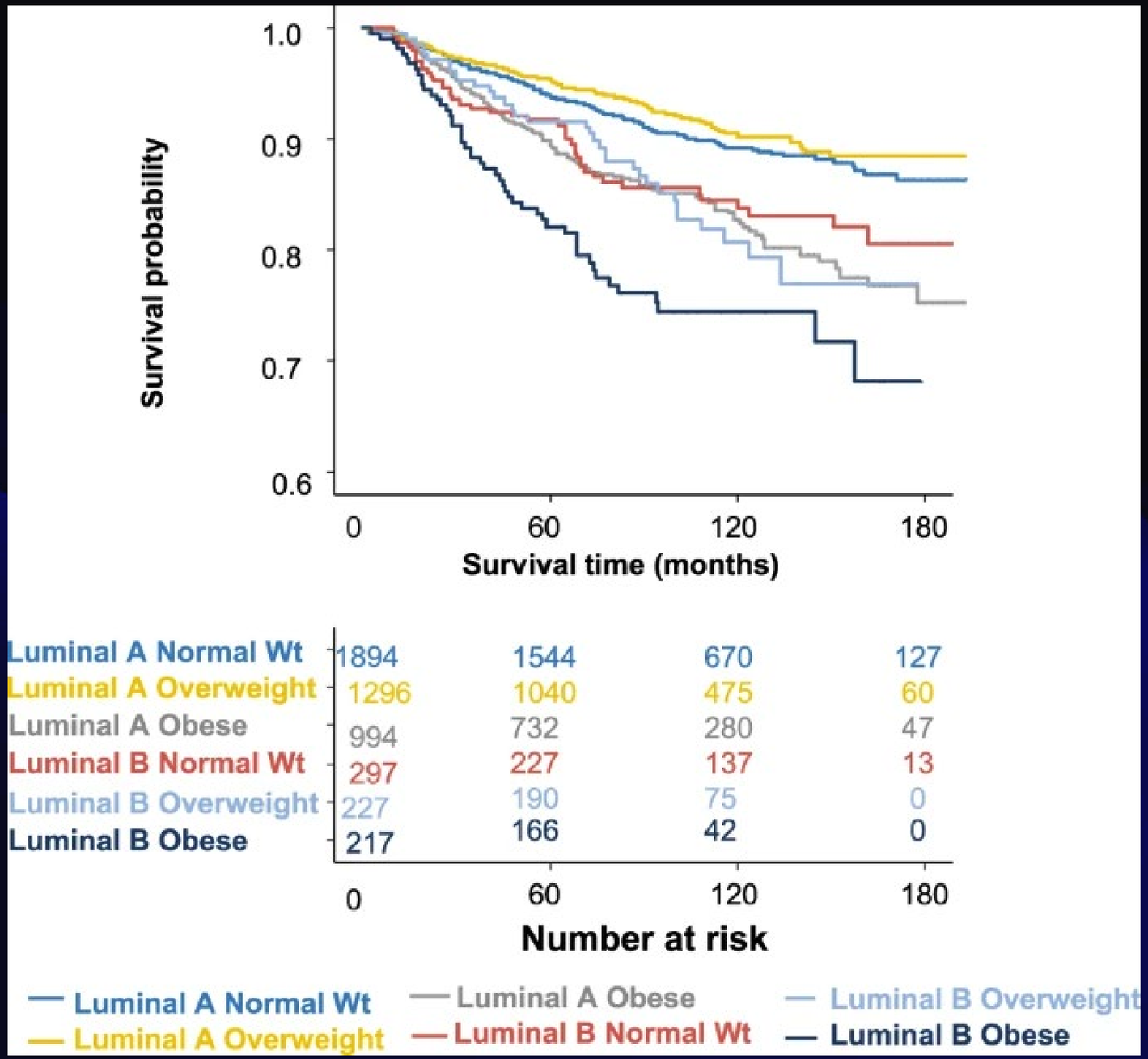
npj | breast cancer

Article | Open Access | Published: 02 October 2019

Obesity and survival among a cohort of breast cancer patients is partially mediated by tumor characteristics

Cindy K. Blair, Charles L. Wiggins, Andrea M. Nibbe, Curt B. Storlie, Eric R. Prossnitz, Melanie Royce, Lesley C. Lomo & Deirdre A. Hill ✉

npj Breast Cancer **5**, Article number: 33 (2019) | Cite this article


Survival probability
1.0
0.9
0.8
0.7
0.6
0
60
120
180
Survival time (months)
Luminal A Normal Wt
Luminal A Overweight
Luminal A Obese
Luminal B Normal Wt
Luminal B Overweight
Luminal B Obese
1894
1544
670
127
1296
1040
475
60
994
732
280
47
297
227
137
13
227
190
75
0
217
166
42
0
0
60
120
180
Number at risk
Luminal A Normal Wt
Luminal A Overweight
Luminal A Obese
Luminal B Normal Wt
Luminal B Overweight
Luminal B Obese

Cancer phobia

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.

Find sources: "Cancer phobia" – news · newspapers · books · scholar · JSTOR *(November 2017)* *(Learn how and when to remove this template message)*

Cancer phobia, also known as **carcinophobia**, is a common phobia and an anxiety disorder characterized by the chronic fear of developing cancer. It can manifest in tremendous feelings of sadness, fear, panic, and distress. In some cases, the phobia can be so extreme that it prevents the individual from living a normal life.

Cancer phobia	
Specialty	Psychology

Contents [hide]

Signs and symptoms [edit]

People living with carcinophobia frequently suffer from depression. Sufferers may become reclusive and obsessive over their health. They may feel overwhelmed and fail to carry out their usual functions. The fear is associated with lack of future planning, and an overall poor quality of life.[1]

Causes [edit]

Cancer survivors are also susceptible to developing a debilitating fear of recurrence due to their previous experience with the disease. Half of all cancer survivors report a moderate to high fear of recurrence. [2]

Treatment [edit]

Cognitive behavioral therapy (CBT) is used for a wide variety of fears and phobias, including carcinophobia. It helps patients to increase awareness of their disorder, and provides ways for patients to cope with their emotions. [3]

Received: 20 January 2016 | Revised: 15 August 2016 | Accepted: 15 September 2016

DOI: 10.1002/pon.4287

WILEY

REVIEW

What do people fear about cancer? A systematic review and meta-synthesis of cancer fears in the general population

Charlotte Vrinten[1] | Lesley M. McGregor[1] | Małgorzata Heinrich[1] | Christian von Wagner[1] | Jo Waller[1] | Jane Wardle[1†] | Georgia B. Black[2]

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[2] Department of Applied Health Research, UCL, London, UK

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Email: c.vrinten@ucl.ac.uk

Funding information
Cancer Research UK

Abstract

Background Cancer has long inspired fear, but the effect of fear is not well understood; it seems both to facilitate and to deter early diagnosis behaviours. To elucidate fear's behavioural effects, we systematically reviewed and synthesised qualitative literature to explore what people fear about cancer.

Methods We searched Medline, Embase, PsycInfo, Web of Science, AnthroSource, and Anthrobase for studies on cancer fear in breast, cervical, and colorectal cancer screening and analysed 102 studies from 26 countries using thematic synthesis.

Results Fears of cancer emanated from a core view of cancer as a vicious, unpredictable, and indestructible enemy, evoking fears about its proximity, the (lack of) strategies to keep it at bay, the personal and social implications of succumbing, and fear of dying from cancer.

Conclusions This view of cancer as 'an enemy' reprises the media's 'war on cancer' theme and may affect the acceptance of cancer early detection and prevention messages, since cancer's characteristics influenced whether 'fight' or 'flight' was considered appropriate.

KEYWORDS

cancer, fear, oncology, screening, worry

*“Despite advances in screening , early diagnosis and treatement of many cancers , one third to half of the general population in the United States and United Kingdom , say they fear **cancer** more than any other disease . Population based studies have consistently shown that about a quarter to half of the population worry to some extent about getting cancer , with 5-10% experiencing extreme worry “*

1. Barker A, Jordan H. Public Attitudes Concerning Cancer. In: Kufe DW, Pollock RE, Weichselbaum RR, et al. ed. *Holland-Frei Cancer Medicine*. BC Decker: Hamilton (ON), 2003. Available from: http://www.ncbi.nlm.nih.gov/books/NBK13445/ (Date last accessed: 25 April 2016).
2. Vrinten C, Waller J, Von Wagner C, Wardle J. Cancer fear: facilitator and deterrent to participation in colorectal cancer screening. *Cancer Epidemiol Biomarkers Prev*. 2015;24:400–405. doi: 10.1158/1055-9965.EPI-14-0967

Some general themes …

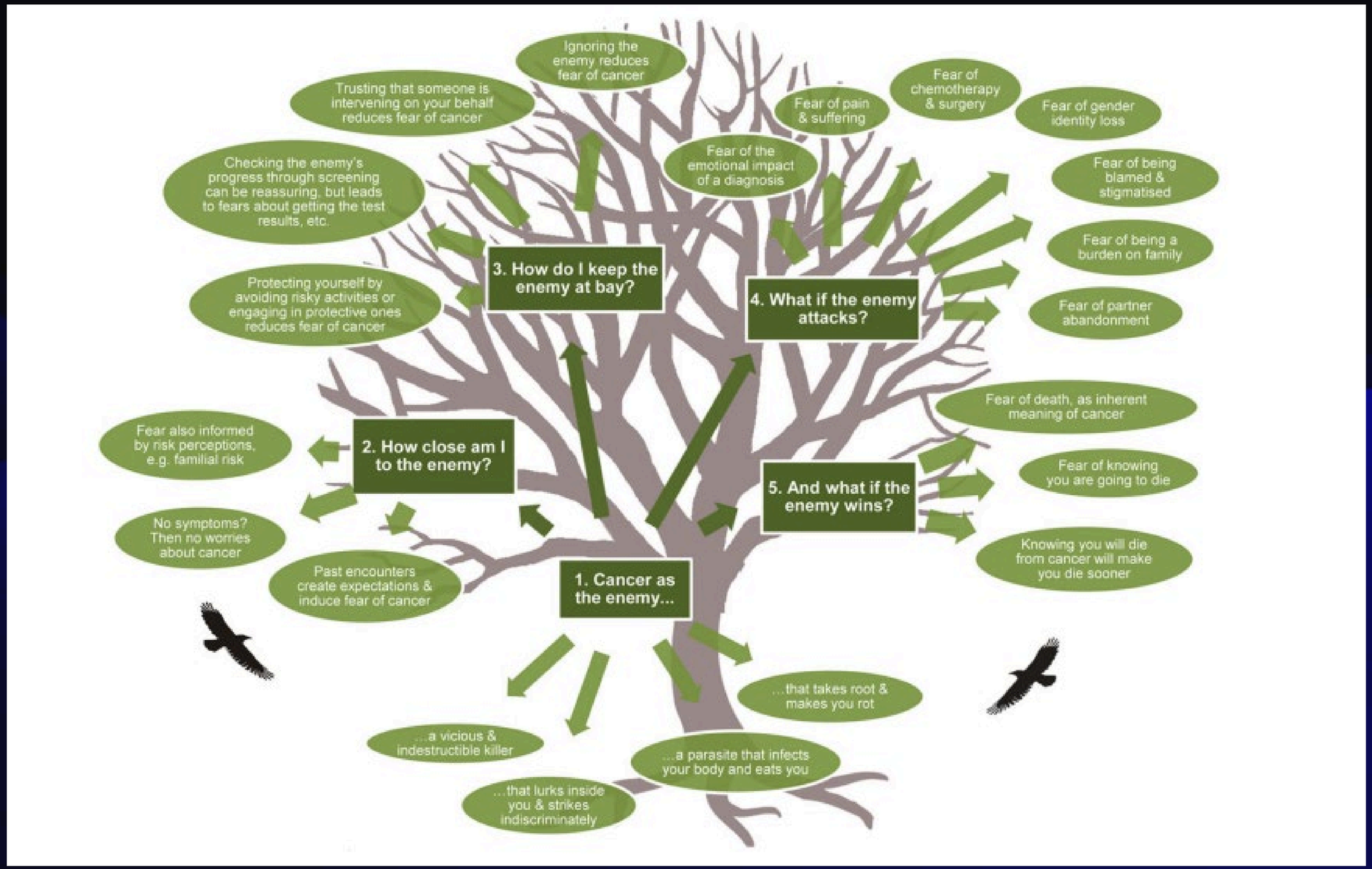
- Many view cancer as “ the enemy “
- Media’s “ war on cancer “ doesn’t help
- Cancer fear often varies based on “ proximity “ or “ how close am I to the enemy “
- Proximity is based on cancer encounters (relatives , knowing people your age who got cancer or knowing people who had cancer) , symptoms , assessment of personal risk (whether accurate or not !!)
- Greater proximity =Increased Fear
- Greater distance = reduced fear and feeling of safety
- Studies show (and I can attest) peoples fear of cancer and treatment and survival dramatically influenced by witnessing family and friends go thru it

- For many fear motivated screening but in others promoted screening avoidance
- “ I’m not sure I could even go thru that so I don’t want to know “
- “ I don’t want to know it before my time “
- Some feel NO susceptibility to it as never experienced it in anyone

close to them or culturally felt it was a “ Western disease “ ie) Caucasian women get breast cancer not so much Chinese women

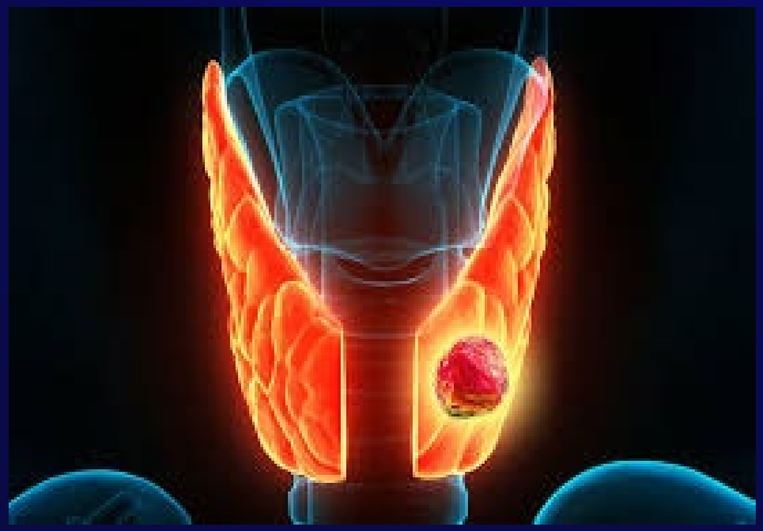
And FYI … The Average 10 year survival rate for women with non metastatic invasive breast cancer is about 84%

Invasive cancer , node negative , 5 year survival approaches 99%


Ignoring the enemy reduces fear of cancer
Trusting that someone is intervening on your behalf reduces fear of cancer
Checking the enemy's progress through screening can be reassuring, but leads to fears about getting the test results, etc.
Protecting yourself by avoiding risky activities or engaging in protective ones reduces fear of cancer
3. How do I keep the enemy at bay?
Fear also informed by risk perceptions, e.g. familial risk
2. How close am I to the enemy?
No symptoms? Then no worries about cancer
Past encounters create expectations & induce fear of cancer
1. Cancer as the enemy...
...a vicious & indestructible killer
...that lurks inside you & strikes indiscriminately
...a parasite that infects your body and eats you
...that takes root & makes you rot
Fear of pain & suffering
Fear of the emotional impact of a diagnosis
4. What if the enemy attacks?
Fear of chemotherapy & surgery
Fear of gender identity loss
Fear of being blamed & stigmatised
Fear of being a burden on family
Fear of partner abandonment
5. And what if the enemy wins?
Fear of death, as inherent meaning of cancer
Fear of knowing you are going to die
Knowing you will die from cancer will make you die sooner

Thyroid nodules

Soooo many



Most are NOT cancer

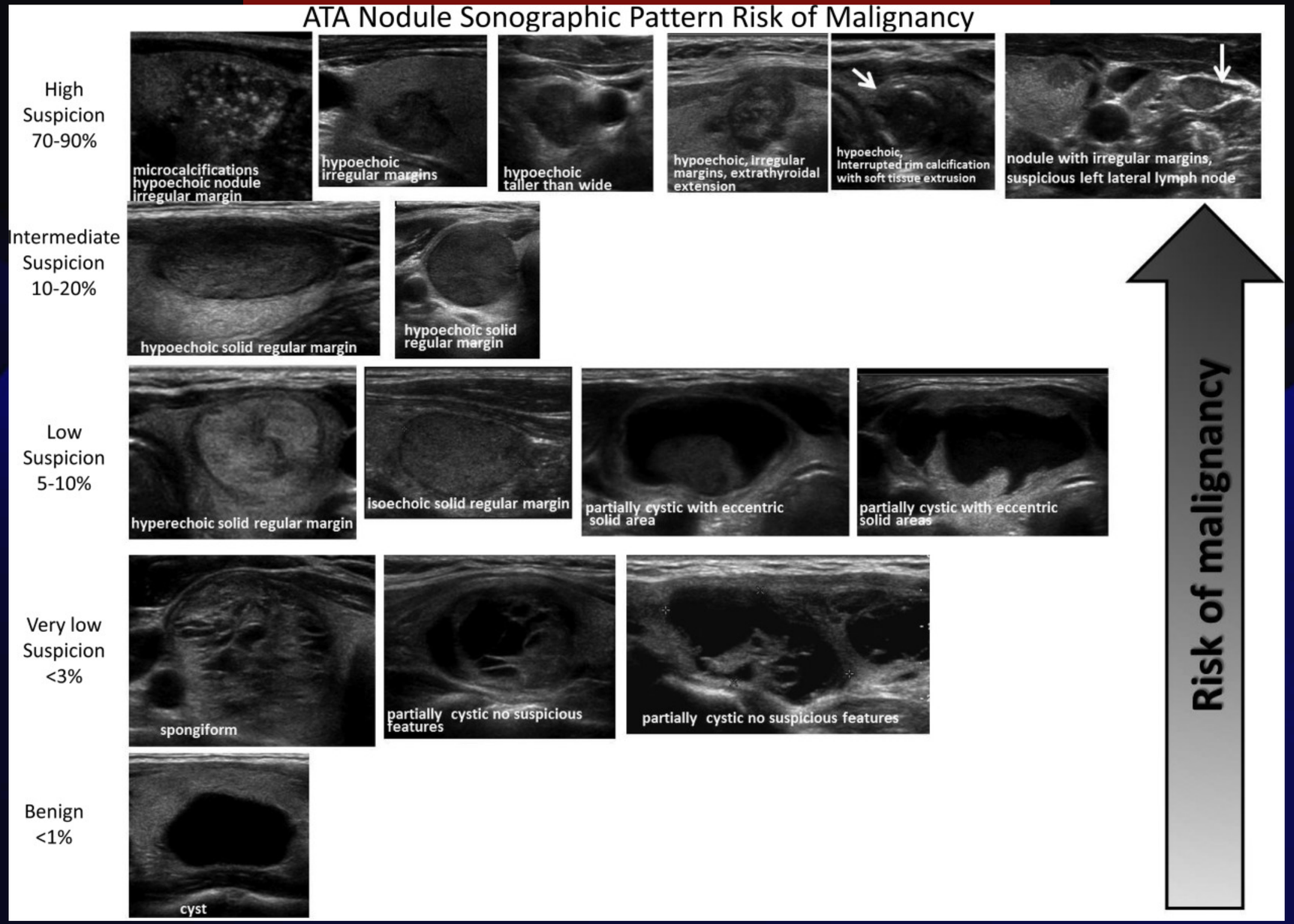
TABLE 8. THE BETHESDA SYSTEM FOR REPORTING THYROID CYTOPATHOLOGY: DIAGNOSTIC CATEGORIES AND RISK OF MALIGNANCY[a]

Diagnostic category	*Estimated/predicted risk of malignancy by the Bethesda system, %*[a]	*Actual risk of malignancy in nodules surgically excised, % median (range)*[b]
Nondiagnostic or unsatisfactory	1–4	20 (9–32)
Benign	0–3	2.5 (1–10)
Atypia of undetermined significance or follicular lesion of undetermined significance	5–15	14 (6–48)
Follicular neoplasm or suspicious for a follicular neoplasm	15–30	25 (14–34)
Suspicious for malignancy	60–75	70 (53–97)
Malignant	97–99	99 (94–100)

[a]As reported in The Bethesda System by Cibas and Ali (1076).

[b]Based on the meta-analysis of eight studies reported by Bongiovanni *et al.* (103). The risk was calculated based on the portion of nodules in each diagnostic category that underwent surgical excision and likely is not representative of the entire population, particularly of nondiagnostic and benign diagnostic categories.

Thyroid Nodule



How we decide to biopsy

TABLE 6. SONOGRAPHIC PATTERNS, ESTIMATED RISK OF MALIGNANCY, AND FINE-NEEDLE ASPIRATION GUIDANCE FOR THYROID NODULES

Sonographic pattern	*US features*	*Estimated risk of malignancy, %*	*FNA size cutoff (largest dimension)*
High suspicion	Solid hypoechoic nodule or solid hypoechoic component of a partially cystic nodule ***with*** one or more of the following features: irregular margins (infiltrative, microlobulated), microcalcifications, taller than wide shape, rim calcifications with small extrusive soft tissue component, evidence of ETE	>70–90[a]	Recommend FNA at ≥1 cm
Intermediate suspicion	Hypoechoic solid nodule with smooth margins ***without*** microcalcifications, ETE, or taller than wide shape	10–20	Recommend FNA at ≥1 cm
Low suspicion	Isoechoic or hyperechoic solid nodule, or partially cystic nodule with eccentric solid areas, ***without*** microcalcification, irregular margin or ETE, or taller than wide shape.	5–10	Recommend FNA at ≥1.5 cm
Very low suspicion	Spongiform or partially cystic nodules ***without*** any of the sonographic features described in low, intermediate, or high suspicion patterns	<3	Consider FNA at ≥2 cm Observation without FNA is also a reasonable option
Benign	Purely cystic nodules (no solid component)	<1	No biopsy[b]

US-guided FNA is recommended for cervical lymph nodes that are sonographically suspicious for thyroid cancer (see Table 7).

[a]The estimate is derived from high volume centers, the overall risk of malignancy may be lower given the interobserver variability in sonography.

[b]Aspiration of the cyst may be considered for symptomatic or cosmetic drainage.

ETE, extrathyroidal extension.

ACR TI-RADS

COMPOSITION (Choose 1)	
Cystic or almost completely cystic	0 points
Spongiform	0 points
Mixed cystic and solid	1 point
Solid or almost completely solid	2 points

ECHOGENICITY (Choose 1)	
Anechoic	0 points
Hyperechoic or isoechoic	1 point
Hypoechoic	2 points
Very hypoechoic	3 points

SHAPE (Choose 1)	
Wider-than-tall	0 points
Taller-than-wide	3 points

MARGIN (Choose 1)	
Smooth	0 points
Ill-defined	0 points
Lobulated or irregular	2 points
Extra-thyroidal extension	3 points

ECHOGENIC FOCI (Choose All That Apply)	
None or large comet-tail artifacts	0 points
Macrocalcifications	1 point
Peripheral (rim) calcifications	2 points
Punctate echogenic foci	3 points

Add Points From All Categories to Determine TI-RADS Level

0 Points	2 Points	3 Points	4 to 6 Points	7 Points or More
TR1 Benign No FNA	**TR2** Not Suspicious No FNA	**TR3** Mildly Suspicious FNA if ≥ 2.5 cm Follow if ≥ 1.5 cm	**TR4** Moderately Suspicious FNA if ≥ 1.5 cm Follow if ≥ 1 cm	**TR5** Highly Suspicious FNA if ≥ 1 cm Follow if ≥ 0.5 cm*

COMPOSITION	ECHOGENICITY	SHAPE	MARGIN	ECHOGENIC FOCI
Spongiform: Composed predominantly (>50%) of small cystic spaces. Do not add further points for other categories. *Mixed cystic and solid:* Assign points for predominant solid component. Assign 2 points if composition cannot be determined because of calcification.	*Anechoic:* Applies to cystic or almost completely cystic nodules. *Hyperechoic/isoechoic/hypoechoic:* Compared to adjacent parenchyma. *Very hypoechoic:* More hypoechoic than strap muscles. Assign 1 point if echogenicity cannot be determined.	*Taller-than-wide:* Should be assessed on a transverse image with measurements parallel to sound beam for height and perpendicular to sound beam for width. This can usually be assessed by visual inspection.	*Lobulated:* Protrusions into adjacent tissue. *Irregular:* Jagged, spiculated, or sharp angles. *Extrathyroidal extension:* Obvious invasion = malignancy. Assign 0 points if margin cannot be determined.	*Large comet-tail artifacts:* V-shaped, >1 mm, in cystic components. *Macrocalcifications:* Cause acoustic shadowing. *Peripheral:* Complete or incomplete along margin. *Punctate echogenic foci:* May have small comet-tail artifacts.

*Refer to discussion of papillary microcarcinomas for 5-9 mm TR5 nodules.

	Category	Proportion of FNAB	Proposed Risk of NIFTP or Malignancy	Proposed Risk of Malignancy (Excludes NIFTP)	Clinical Management
I.	Nondiagnostic	10%–15%	5%–10%	5%–10%	Correlate with clinical/radiologic findings Consider repeat FNAB
II.	Benign	60%	0%–3%	0%–3%	Periodic US exam Consider repeat FNAB if size increases or change in US feature
III.	Follicular lesion of undetermined significance/atypia of undetermined significance	10%	6%–18%	10%–30%	Correlate with clinical/radiologic findings Consider repeat FNAB ± molecular testing Surgery*
IV.	Follicular neoplasm/suspicious for follicular neoplasm	10%	10%–40%	25%–40%	Consider molecular testing Surgery*
V.	Suspicious for malignancy	3%	45%–60%	50%–75%	Surgery*
VI.	Malignant	5%–6%	94%–96%	97%–99%	Surgery*

*When surgery is needed, thyroid lobectomy or total thyroidectomy is indicated by clinical and cancer-related variables including molecular testing results and patient preference.

Molecular testing has really changed thyroid surgery

Table 2. Summary of recent commercially available molecular tests [17,82,83].

	Affirma® GSC	ThyGenX/ThyraMIR® ThyraGeNEXT/ThyraMIR®, *	Thyroseq v3®
Methodology	mRNA gene sequencing and gene expression	NGS and mRNA sequencing, polymerase chain reaction miRNA expression	NGS of DNA and mRNA
Tested alterations	511 mRNA panel, gene expression of 1115 genes, CAN [3]	7–10 DNA and mRNA panel, 10 miRNA	112 DNA and mRNA panel (>12,000 variants and 150 gene fusions), CAN [3], gene expression
Ideally applicable for	Bethesda III/IV, Hürtle cell lesions	Bethesda III/IV/V	Bethesda III/IV/V, Hürtle Cell lesions
Report	• GSC results as benign *or* suspicious • *BRAF*^{V600E}, medullary TC, *RET/PTC 1/3* specified • *TERT* not offered	• Reports if oncogene in THyGenX/ThyraGeNEXT present • If ThyGenX/ThyGeNExt negative, then ThyraMIR reported as high or low risk • *BRAF*^{V600}, *RET/PTC*, *TERT* mutations specified	• Positive or negative with detailed result for each marker • *TERT* and *TP53* offered
Interpretation of test results	Benign: consider surveillance Suspicious: consider surgery	ThyGenX/ThyraGeNEXT positive: consider surgery ThyraMIR high risk: consider surgery ThyraMIR low risk: consider surveillance	Negative: consider surveillance Positive: consider surgery
Validation Study	Patel et al. [84]	Labourier et al. [85]	Steward et al. [86]
Nodules examined	n = 190	n = 109	n = 247
Prevalence of cancer	24%	32%	28%
Sensitivity	91% (79–98)	89% (73–97)	94% (85–100)
Specificity	68% (60–67)	85% (75–92)	82% (63–84)
NPV [1]	96% (90–99)	94% (85–98)	97% (93–99)
PPV [2]	47% (36–58)	74% (58–86)	66% (56–75)
	"Rule out"	"Rule in" and "Rule out"	"Rule in" and "Rule out"

[1] Negative predictive value; [2] Positive predictive value; [3] Copy number alterations; * The ThyGeNEXT expanded DNA and mRNA panel among them *TERT, PIK3CA, ALK, PTEN* mutation.

Most everyone in town does this but NOT everyone
Our office
SJI
Crouse

Thyroid nodules

- We biopsy too much
- We follow up too much
- US FNA has a very low false- negative rate (1-5%)
- Sonographic pattern as shown is much more predictive of risk of missed malignancy than size or growth

How should we be following (according to ATA Guidelines)

- If FNA was benign but nodule deemed suspicious - Repeat the US and the FNA in 1 year
- If FNA was benign and US pattern was low to intermediate suspicion - Repeat the US in 1-2 YEARS , if bigger or more suspicious could consider repeat FNA or watch for continued growth
- If FNA was benign and nodule very low suspicion you could repeat US but if so not for AT LEAST 2 YEARS

- If a nodule has had repeat US guided FNA with a second benign cytology result - US Surveillance is NO LONGER INDICATED
- The risk of malignancy after 2 benign cytology results is virtually ZERO
- Previous guidelines have recommended repeat FNA for nodules that grow during serial sonographic observation

Thyroid Ultrasound Insanity

CLINICAL HISTORY: Thyroid nodules.

COMPARISON: 7/20/2018

FINDINGS: High resolution ultrasound is performed of the thyroid gland.

There are numerous nodules bilaterally. The largest are as follows:

1. Left mid lobe 1.2 x 0.8 x 0.5 cm. Decrease in size. Partially cystic.
2. Left mid lobe 1.1 x 1.0 x 0.9 cm. Hyperechoic. No change.
3. Left mid lobe. Hyperechoic 1.2 x 1.0 x 0.9 cm.

The right lobe of the thyroid gland measures cm.
The left lobe of the thyroid gland measures cm.
The isthmus measures cm.
The thyroid gland is inhomogeneous in echotexture.

IMPRESSION: Numerous thyroid nodules. No significant change. Suggest follow-up in 6 to 12 months

2019 Thyroid US , compared to 2018

2020 compared to 2019

Narrative & Impression

CLINICAL HISTORY: Thyroid nodules.

COMPARISON: 3/29/2019.

FINDINGS: The right lobe measure 5.0 x 1.8 x 1.9 cm.

The left lobe measure 5.2 x 2.1 x 1.7 cm.

The isthmus measured 7.9 mm.

Number of nodules: Right: 0. Left: 7.

The thyroid appear heterogeneous. Dominant nodules in the left lobe are as follows:

1. Hyperechoic midpole 1.1 x 1.0 x 0.9 cm, previously 1.1 x 1.0 x 0.9 cm.
2. Hyperechoic midpole 1.1 x 1.0 x 1.1 cm, previously 1.2 x 1.1 x 0.9 cm.

IMPRESSION: Heterogeneous thyroid with multiple nodules within the left lobe as described.

Dictated by: JOSEPH ANG M.D. on 01/07/2020

2021 compared to 2020

CLINICAL HISTORY: Thyroid nodules.

COMPARISON: January 7, 2020

TECHNIQUE: Realtime sonographic images of the thyroid gland were obtained using high-resolution technique.

FINDINGS: Right lobe: 5.1 x 1.7 x 1.9cm.

Left lobe: 5.3 x 2.0 x 1.4cm.

Isthmus: 8.3mm.

Diffuse heterogeneity and increased vascularity is seen throughout the thyroid gland bilaterally.

There are a total of 6 measurable nodules on the right and 8 on the left.
Largest nodules greater than 1 cm are listed as follows:

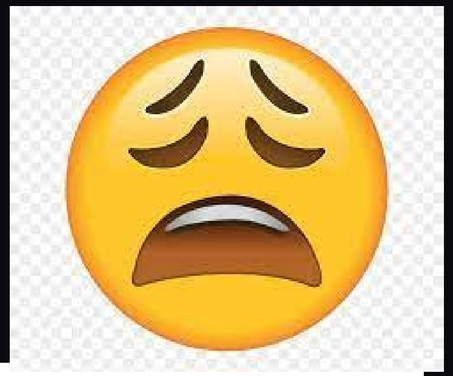
Left upper pole 1.2 x 1.0 x 0.8 cm, unchanged. Hyperechoic circumscribed solid nodule.

Left midpole 1.5 x 1.2 x 1.3 cm, hyperechoic solid circumscribed. This previously measured 1.1 x 1.0 x 1.1 cm.

Lymphadenopathy: None

IMPRESSION: Diffusely heterogeneous multinodular thyroid gland with increased vascularity bilaterally. Hyperechoic nodule in the midpole the left lobe of the thyroid which is increased slightly in size from the previous study. This is still below the size threshold for biopsy based on ATA and American College of Radiology criteria for a nodule of this appearance. Additional follow-up is recommended in 1 year.

2022 compared to 2021
And then gets referred to me !!!!



Narrative & Impression

CLINICAL HISTORY: Thyroid nodules.

COMPARISON: 7/28/2021.

FINDINGS: The right lobe of the thyroid gland measures 4.9 x 1.7 x 1.6 cm.

The left lobe of the thyroid gland measures 5.3 x 1.7 x 1.3 cm.

The isthmus measures 5.3 mm.

Total number of nodules: Right 5, left 7

Largest nodules (greater than 1 cm) measured as follows:

1. Left, upper pole, hyperechoic 1.1 x 1.0 x 0.9 cm, previously 1.2 x 1.0 x 0.8 cm.
2. Left, mid pole, hyperechoic 1.4 x 1.2 x 1.2 cm, previously 1.5 x 1.2 x 1.3 cm.

The thyroid gland is heterogeneous in echotexture.

IMPRESSION: Multinodular thyroid gland with stable dominant nodules. Continued follow-up may be helpful.

Dictated by: SHERWIN POLLOCK M.D. on 01/16/2023

Journal of MEDICAL IMAGING and RADIATION ONCOLOGY

Medical Imaging—Review Article

The global epidemic of thyroid cancer overdiagnosis illustrated using 18 months of consecutive nodule biopsy correlating clinical priority, ACR-TIRADS and Bethesda scoring

Stewart P Hawkins, Sophy G Jamieson, Christin N Coomarasamy, Irene C Low

First published: 05 March 2021 | https://doi.org/10.1111/1754-9485.13161

SP Hawkins MBBS, FRANZCR; **SG Jamieson** BHSc (Medical Imaging); **CN Coomarasamy** Mphil (Health economics), MSc (Medical Statistics), BSc; **IC Low** MBChB, FRCPA.

Conflict of interest: None.

Summary

Low thyroid cancer mortality worldwide has not been altered by decades of increasing radiological, pathological and surgical intervention for thyroid nodules. Ultrasound-based risk stratification of thyroid nodules, such as TIRADS, has been introduced to reduce intervention for the 'global epidemic' of thyroid cancer 'overdiagnosis'. This article illustrates the use of TIRADS at a New Zealand tertiary centre, during its introduction, with all nodules undergoing fine-needle aspiration biopsy (FNAB) correlated with clinical referral priority and cytological Bethesda score. The correlation between TIRADS and Bethesda score was not significant but cytology had a strong association with clinical priority. Accuracy of TIRADS was poor though the risk of malignancy for TIRADS 5 nodules was 5.1 times those rated as TIRADS 3. After TIRADS was introduced, there was no significant trend in the proportion of malignant nodules diagnosed by FNAB. Despite an incomplete TIRADS programme, the ACR targets of malignancy rates were achieved. The number of patients, as well as the number of nodules per patient, referred for FNAB continues to rise. Changing papillary thyroid cancer nomenclature and other control measures by health policymakers, such as adjustments to payment systems, may be justified. Radiologists are wasting precious health resources that can be better deployed. The use of TIRADS is expensive and a symptom of health policy failure. Clear recommendations from professional societies to not report incidental small thyroid nodules may be a useful start. Whether TIRADS merits continuing use and promotion should be further investigated.

14: Regarding Thyroid Cancer, Are You a Minimalist or a Maximalist? with Dr. Michael Tuttle from Sloan Kettering

Philip James - January 7, 2022 - Endocrine / Podcast / Surgery - 0 Comments

Often, surgery is not necessary to treat thyroid cancer, but much of the decision will depend on the patient characteristic

Review

A clinical framework to facilitate selection of patients with differentiated thyroid cancer for active surveillance or less aggressive initial surgical management

R. Michael Tuttle, Ling Zhang & Ashok Shaha

Pages 77-85 | Received 02 Jan 2018, Accepted 05 Mar 2018, Accepted author version posted online: 06 Mar 2018, Published online: 14 Mar 2018

Research

JAMA Otolaryngology–Head & Neck Surgery | Original Investigation

Natural History and Tumor Volume Kinetics of Papillary Thyroid Cancers During Active Surveillance

R. Michael Tuttle, MD; James A. Fagin, MD; Gerald Minkowitz, MD; Richard J. Wong, MD; Benjamin Roman, MD, MSHP; Snehal Patel, MD; Brian Untch, MD; Ian Ganly, MD, PhD; Ashok R. Shaha, MD; Jatin P. Shah, MD; Mark Pace, MBBS, FRACP; Duan Li, MD; Ariadne Bach, MD; Oscar Lin, MD; Adrian Whiting, BS; Ronald Ghossein, MD; Inigo Landa, PhD; Mona Sabra, MD; Laura Boucai, MD; Stephanie Fish, MD; Luc G. T. Morris, MD, MSc

IMPORTANCE Active surveillance of low-risk papillary thyroid cancer (PTC) is now an accepted alternative to immediate surgery, but experience with this approach outside of Japan is limited. The kinetics (probability, rate, and magnitude) of PTC tumor growth under active surveillance have not been well defined.

OBJECTIVE To describe the kinetics of PTC tumor growth during active surveillance.

DESIGN, SETTING, AND PARTICIPANTS Cohort study of 291 patients undergoing active surveillance for low-risk PTC (intrathyroidal tumors ≤1.5 cm) with serial tumor measurements via ultrasonography at a tertiary referral center in the United States.

INTERVENTION Active surveillance.

MAIN OUTCOMES AND MEASURES The cumulative incidence, rate, and magnitude of the change in tumor diameter or volume, as well as associations with patient and tumor characteristics.

RESULTS Of the 291 patients, 219 (75.3%) were women; mean (SD) age was 52 (15) years. During a median (range) active surveillance of 25 (6-166) months, growth in tumor diameter of 3 mm or more was observed in 11 of 291 (3.8%) patients, with a cumulative incidence of 2.5% (2 years) and 12.1% (5 years). No regional or distant metastases developed during active surveillance. In all cases, 3-dimensional measurements of tumor volume allowed for earlier identification of growth (median, 8.2 months; range, 3-46 months before increase in tumor diameter). In multivariable analysis, both younger age at diagnosis (hazard ratio per year, 0.92; 95% CI, 0.87-0.98; $P = .006$) and risk category at presentation (hazard ratio for inappropriate, 55.17; 95% CI, 9.4-323.19; $P < .001$) were independently associated with the likelihood of tumor growth. Of the tumors experiencing volume growth, kinetics demonstrated a classic exponential growth pattern, with a median doubling time of 2.2 years (range, 0.5-4.8 years; median $r^2 = 0.75$; range, 0.42-0.99).

CONCLUSIONS AND RELEVANCE The rates of tumor growth during active surveillance in a US cohort with PTCs measuring 1.5 cm or less were low. Serial measurement of tumor volumes may facilitate early identification of tumors that will continue to grow and thereby inform the timing of surveillance imaging and therapeutic interventions.

Thyroid
Mary Ann Liebert, Inc.

2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer: The American Thyroid Association Guidelines Task Force on Thyroid Nodules and Differentiated Thyroid Cancer

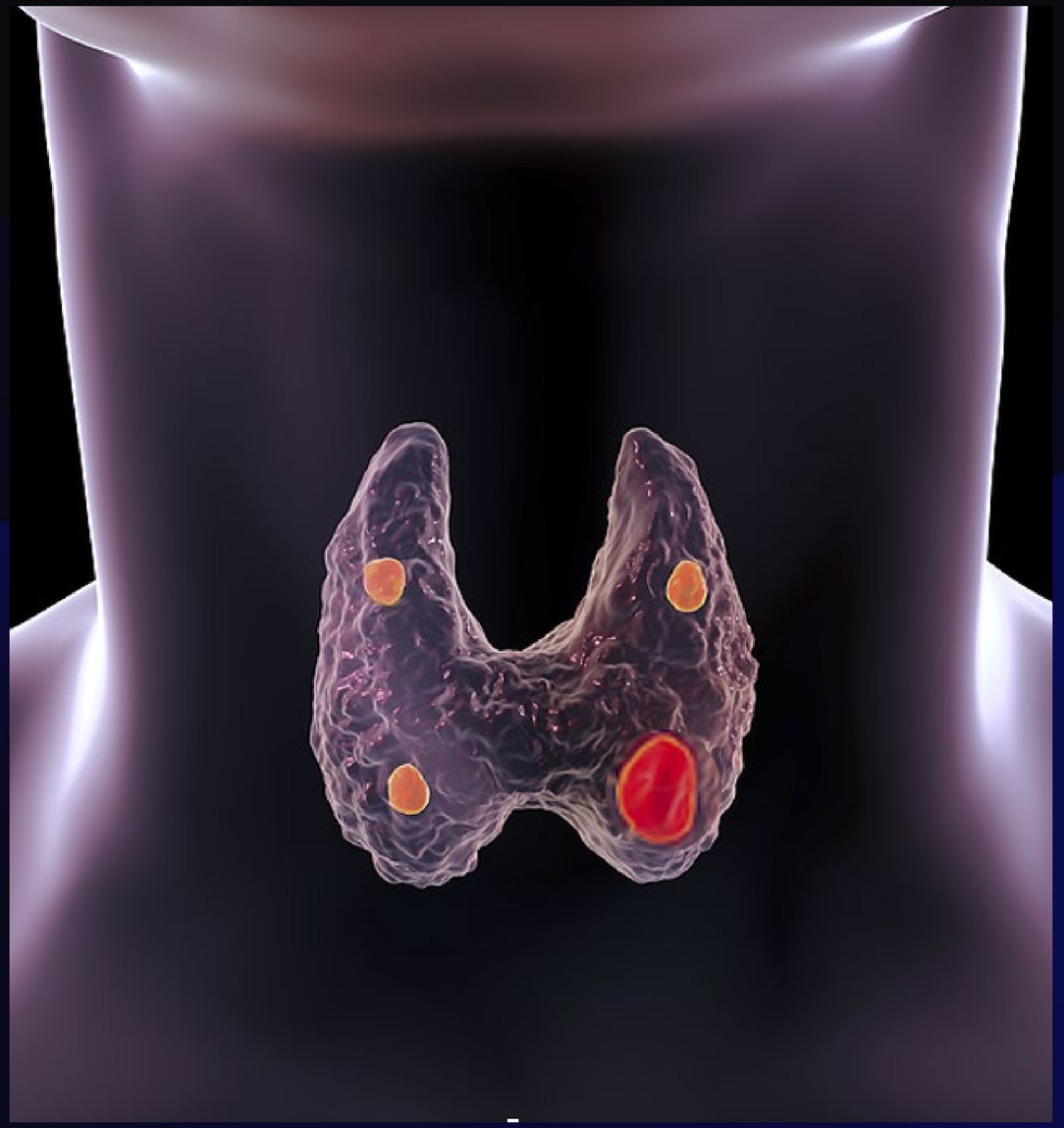
Bryan R. Haugen, Erik K. Alexander, [...], and Leonard Wartofsky

Now mentioned in ATA Guidelines

[D3] Active surveillance of DTC primary tumors

Our Japanese colleagues have provided compelling data that an active surveillance management approach to papillary microcarcinoma is a safe and effective alternative to immediate surgical resection in properly selected patients (143,149).

“ An unecessary surgery done well is still an *unecessary* surgery “



Hyperparathyroidism

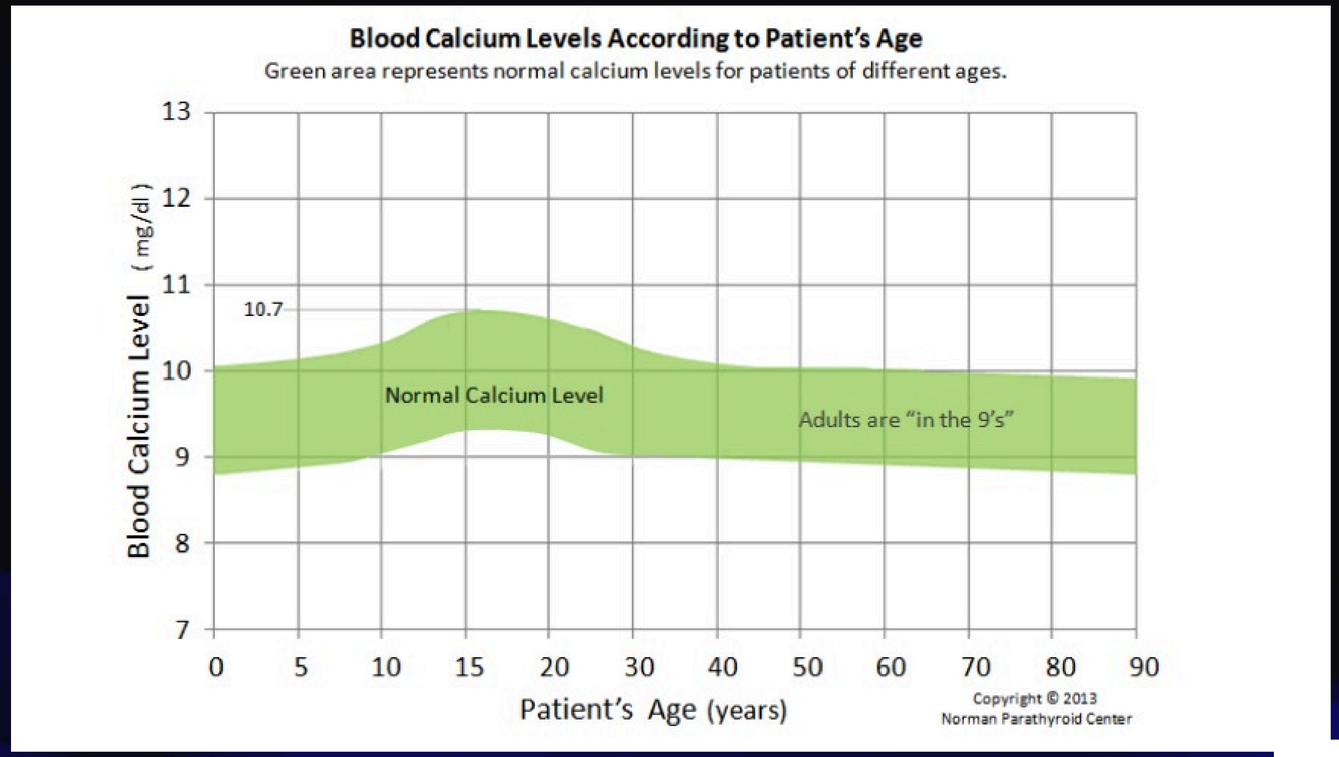
Is it or isn’t it

Calcium 11.2
PTH 130

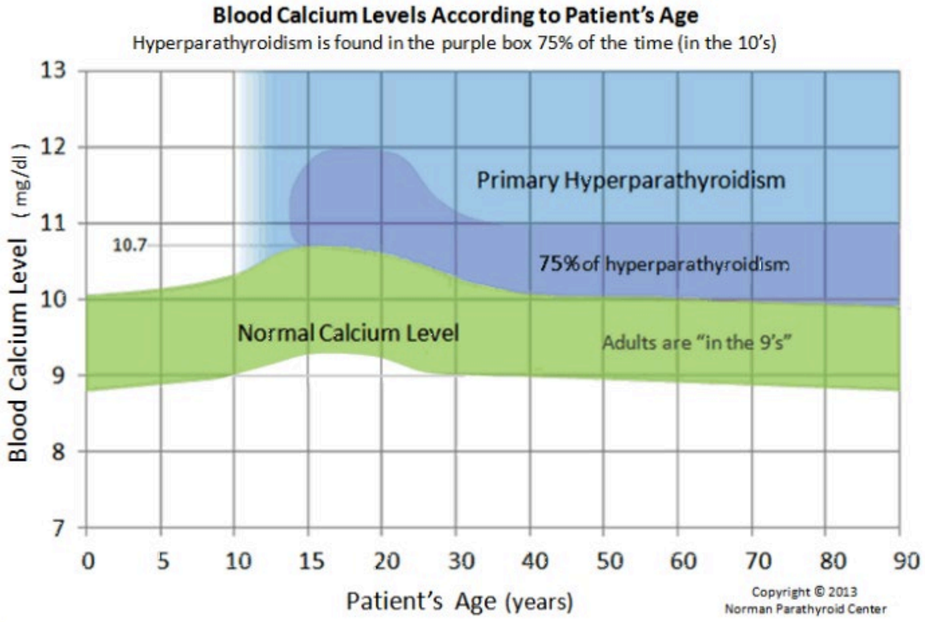
Calcium 10.5, 10.2 , 10.0
PTH 67
Age 70

Calcium 10.8
PTH 88

Calcium 10.1 , 10.2
PTH 57



Once we are over age 40 our calcium is usually in the " 9's " and so persistent 10.2, 10.3 mg.dL NOT normal



The tricky cases

Even for me

- FHH
- The bariatric patient s/p gastric bypass
- Lithium use
- The hypercalcemic with minimally elevated PTH
- The elevated PTH with very minimal hypercalcemia to almost normal calcium

♦ **19. Hypercalcemia with a Parathyroid Hormone Level of ≤50pg/mL: Is this Primary Hyperparathyroidism?**

Rongzhi Wang[1], Peter Abraham[1], Jessica M Fazendin[1], Brenessa M Lindeman[1], Herbert Chen[1]

[1]*UAB*

Background: Primary hyperparathyroidism (pHPT) is characterized by hypercalcemia with inappropriately normal or elevated parathyroid hormone (PTH). However, the absolute PTH value which is defined as inappropriately normal is not clear. We review our experience with parathyroidectomy in patients with hypercalcemia and a PTH of ≤50.0 pg/mL [normal range 12.0-88.0 pg/mL].

Methods: Between November 2000 and August 2021, 2384 patients underwent parathyroidectomy for primary hyperparathyroidism. Of these, 185 patients had preoperative PTH ≤50.0 pg/mL [PTH≤50]. The biology and outcomes were compared to patients with PTH>50.0 pg/ml [PTH>50]. Chi-square, independent-samples t-test and multinominal logistic regression were used for statistical analyses. $p<0.050$ was considered statistically significant. IBM SPSS 27.0 was used for statistical analysis.

Results: Of the PTH≤50 patients, the median PTH was 40.0 pg/mL [range 11.6-50.0 pg/mL]. 13 of 185 patients had pre-operative PTH levels ≤25.0 pg/mL. All patents were found to have hypercellular abnormal parathyroid glands with a cure rate of 98.6%. Single adenomas were only present in 42.6% while 57.4% had multi-gland disease. When comparing the PTH≤50 to the PTH>50 group, the PTH ≤50 group was younger (55.7±15.7 vs. 60.1±14.2, $p<0.001$), had lower BMI (28.7±7.1 kg/m^2 vs. 31.2±7.9 kg/m^2, $p<0.001$), higher preoperative vitamin D (38.6±17.5 ng/mL vs. 31.6±14.3 ng/mL $p<0.001$), and higher incidence of multi-gland disease (57.4% vs. 31.6%, $p<0.001$). There was no difference between gender, race, patient-reported symptoms (including fatigue, kidney stones, bone disease, prior fracture and abdominal pain), previous parathyroidectomy, preoperative calcium, intraoperative PTH >50% drop, incidence of ectopic glands, cure rate or postoperative complications (persistent or recurrent hyperparathyroidism and postoperative hypocalcemia).

Conclusions: Patients with primary hyperparathyroidism can present with hypercalcemia with a PTH as low as 11.6 pg/mL. In patients with preoperative PTH levels ≤50 pg/ml, the majority have multi-gland disease. These patients should undergo bilateral parathyroid exploration.

What about the PTH levels ??

♦ 22. Phenotypes of Primary Hyperparathyroidism: Does parathyroidectomy improve clinical outcomes forall?

Valerie L Armstrong[1], Patrick T Hangge[1], Richard J Butterfield[1], Nabil Wasif[1], Chee-Chee Stucky[1], Patricia A Cronin[1]

[1]*Mayo Clinic, AZ*

Background: Primary hyperparathyroidism (PHPT) consists of 3 biochemical phenotypes; classic, normocalcemic (ncPHPT), and normohormonal (nhPHPT). However, the clinical outcomes of patients with ncPHPT and nhPHPT are not well described. The objective of this study was to examine surgical and clinical outcomes by phenotype.

Methods: A retrospective review was performed of patients who underwent parathyroidectomy for PHPT at a single institution from 2015-2019. Pre- and post-operative clinical data were collected. Logistical regression analysis of post-operative symptomatic kidney stones and Cox Proportional Hazard analysis of recurrence free survival were performed. A p-value <0.05 was considered statistically significant.

Results: 421 patients were included (340 classic, 39 ncPHPT, 42 nhPHPT). There were no significant differences in patient characteristics or co-morbidities although more ncPHPT (16%) were Hispanic, p=0.037. The median follow-up was 9.5 months (range 0-126). There was no difference in postoperative complications between phenotypes.

ncPHPT was significantly associated with persistent disease with 6/25 (19.4%) patients experiencing persistent disease compared to 1/35 (2.8%) and 3/243 (1.2%) in nhPHPT and classic phenotypes, respectively (p<0.001). ncPHPT had significantly increased risk of recurrence compared to classic phenotype [HR (95% CI) 3.50 (1.66, 7.36), p=0.0016].

Among patients who presented with kidney stones preoperatively (n=94), ncPHPT were more likely to experience symptomatic stone disease postoperatively, 6/13 (46.2%) compared to 11/68 (16.2%) classic, and 2/13 (15.4%) nhPHPT,p=0.0429. ncPHPT was the only found univariate predictor of postoperative kidney stone recurrence in patients with preoperative kidney stones history [OR (95% CI) 4.44 (1.25, 15.77), p=0.029].

A pre- and post-operative DEXA scan was available for 99 patients (77 classic, 14 ncPHPT & 8 nhPHPT). The highest percentage change at the first postoperative DEXA scan for classic PHPT (mean ± SD, 6.4 ± 9.1) and ncPHPT (4.8 ± 11.9) showed improvement, as compared to nhPHPT which remained stable (0.2 ± 14.2), but there was no significant difference between phenotypes (p=0.09).

Conclusions: The 3 phenotypes of PHPT are distinct clinical entities. ncPHPT had higher incidence of persistent/recurrent disease and episodes of postoperative renal colic, with improvements in postoperative bone density. This data should inform preoperative discussions with patients of ncPHPT and nhPHPT and to manage postoperative expectations.

High Calcium / High PTH

High Calcium / Normal PTH

Normal Calcium / High PTH

New Consult for Primary Hyperparathyroidism

Hypercalcemia

- PTH, intact and calcium; Future
- PTH-related peptide; Future
- Vitamin D 1,25 dihydroxy; Future
- Vitamin D 25 hydroxy; Future
- Protein electrophoresis, serum; Future
- Protein electrophoresis, urine; Future
- Kappa lambda free light chains; Future
- CBC and differential; Future
- Comprehensive metabolic panel; Future
- Lipid panel; Future
- TSH; Future

Component	Ref Range & Units	1 mo ago (11/18/22)	1 mo ago (11/18/22)	8 mo ago (5/2/22)	1 yr ago (10/26/21)	1 yr ago (4/26/21)	3 yr ago (10/29/19)
PTH	18.5 - 88.0 pg/mL	117.6 ^					
Calcium	8.3 - 10.6 mg/dL	10.4	10.3	11.7 ^ R, CM	10.7 ^ R	10.8 ^ R	10.9 ^ R

PTH-related peptide

Order: 358107397

Status: Final result Visible to patient: Yes (seen) Next appt: None Dx: Hypercalcemia; Essential hypertension

1 Result Note

Component	Ref Range & Units	1 mo ago
PTH-Related Protein	0.0 - 3.4 pmol/L	3.7 ^

Kappa lambda free light chains

Order: 358107392

Status: Final result Visible to patient: Yes (seen) Next appt: None Dx: Hypercalcemia; Essential hypertension

2 Result Notes | 1 Follow-up Encounter

Component	Ref Range & Units	1 mo ago
Kappa free light chains	3.30 - 19.40 mg/L	27.93 ^

Date	Type	ICD-9	ICD-10	Description	Disease Status	Status Date
11/18/2022	Primary	273.1	D47.2	Monoclonal gammopathy	Initial Diagnosis	2/15/2023

Hematology Oncology History
The patient is a 72-year-old woman with hypertension, hyperlipidemia and rheumatoid arthritis who reports that in 2020 she was diagnosed with hyperparathyroidism. Unfortunately, she was lost to follow-up due to the pandemic.

In May, 2022 she underwent blood work which was notable for a calcium of 11.7. This launched a thorough investigation including free light chain assay SPEP with immunofixation, PTH and PTH RP.

Of the above-mentioned studies, her PTH was 117.6 with calcium of 10.4, PTHrp was 3.7 (upper limit of normal is 3.4), normal creatinine, normal hemoglobin and a free light chain assay ratio of 1.89 which is abnormal. SPEP with immunofixation was unremarkable.

She was sent here for further evaluation

Status of Disease

Disease Status: Initial Diagnosis.

Impression
The patient is a 72-year-old woman with hyperparathyroidism found to have hypercalcemia with a abnormal free light chain assay and an elevated PTHrp.

Plan:
I reviewed her lab work which demonstrates no evidence of an M spike, negative immunofixation but a mildly elevated free kappa light chain with an elevated kappa to lambda ratio. I do not believe this is consistent with myeloma. We discussed repeating in approximately 6 months to further assess. If normalized, no further follow-up would be necessary. If increased, we could discuss whether to pursue a bone marrow biopsy.

In the meantime, she will continue working with her other physicians regarding hyperparathyroidism.
HOA Labs ordered:

Treatment Plan:
Name of treatment including dose, and frequency:
- Continue Surveillance

Patient LL - referred for primary hyperparathyroidism

Actual case

- Age 60
- PMHx significant for
  - Obesity s/p Gastric Bypass
  - Hashimotos thyroiditis
  - HTN
  - Depression
  - Chronic back pain , DDD

2 Result Notes

Component	Ref Range & Units	3 wk ago	3 mo ago	11 mo ago	1 yr ago	2 yr ago	3 yr ago	4 yr ago
Sodium	136 - 145 mmol/L	141	147 R	144 R	140 R	141	143 R	142 R
Potassium	3.5 - 5.1 mmol/L	4.5	5.0 R	4.2 R	3.8 R	3.5 ⌄ R	3.9 R	4.4 R
Chloride	98 - 107 mmol/L	100	100 R	102 R	99 R	106 R	99 R	103 R
CO2	20 - 31 mmol/L	34 ^	29 R	29 R	31 ^ R	28 R	29 R	28 R
Anion Gap	7 - 16 mmol/L	7	18.0 ^ R	13.0 R	10.0 R	7	15.0 R	11.0 R
Urea nitrogen	9 - 23 mg/dL	12	13.0 R	11.0 R	17.0 R	12 R	10.0 R	13.0 R
Creatinine	0.55 - 1.02 mg/dL	0.88	1.0 R, CM	0.8 R, CM	0.8 R, CM	0.87 R	0.9 R	0.8 R
BUN/Creatinine Ratio	10.0 - 20.0 RATIO	13.6			21.3 R	13.8	11.1 ⌄ R	16.3 R
GLUCOSE	70 - 99 mg/dL	101 ^	95 R	99 R	98 R	89	92 R	118 ^ R
Calcium	8.3 - 10.6 mg/dL	9.6	10.8 ^ R	9.9 R	10.2 R	9.3 R	10.0 R	9.5 R
Protein, Total	5.7 - 8.2 g/dL	6.4	7.0 R		7.3 R		6.9 R	
Albumin	3.4 - 5.0 g/dL	3.5	4.0 R, CM		4.2 R, CM		4.0 R, CM	
Globulin	2.7 - 4.3 g/dL	2.9	3.0 R		3.1 R		2.9 R	
Alb/Glob ratio	RATIO	1.2						
Alkaline Phosphatase	46 - 116 U/L	115	126 R, CM		113 R, CM		120 R, CM	
Bilirubin, Total	0.0 - 1.0 mg/dL	0.4	0.4 R		0.4 R		0.3 R	


PTH, intact (non-OR only) (Order 360086855)
Date: 12/29/2022 Department: Pre Admission Testing Released By: Valerie M Dolan, RN Authorizing: Kara C Kort, MD
PTH, intact (non-OR only)
Status: Final result Visible to patient: Yes (seen) Next appt: 02/14/2023 at 02:15 PM in Endocrinology (Marya Gendzielewski, MD) Dx: Hyperparathyroidism
2 Result Notes
Component
Ref Range & Units
3 wk ago
3 mo ago
PTH
18.5 - 88.0 pg/mL
110.2 ^
92.2 ^

Endocrinology Consult with Dr G

Hyperparathyroidism - Primary

Patient comes in for evaluation of primary hyperparathyroidism at the request of her parathyroid surgeon. The patient had been sent to Dr. Kort because of concerns of primary hyperparathyroidism. The patient has had complaints of fatigability. She also complains of feeling mentally foggy and fuzzy without the same memory that she used to have. She has not had kidney stones. She does not have chronic GI symptoms. She has not had any fractures and her bone density is perfectly normal with no evidence of osteoporosis. She does not have long bone pain. She apparently has had some osteopenia in her distal forearm by her previous endocrinologist.

The patient's calcium levels have not been elevated in a sustained manner. They typically have been in the range of less than 10. She did have 1 blood test where it was elevated at 10.8 and the PTH level came back at 92.2 on 1 occasion in the 110.2 on another. Both of those are elevated. Her vitamin D level is adequate at 32 but not greater than 40. Her renal function has been normal. Ionized calcium level has been normal at 5.12.

she most recently underwent a 4D CAT scan which shows that she may have a lesion in the left side of her neck.

I reviewed with the patient that she has mostly non- specific symptoms and has not had sustained hypercalcemia. Her PTH level may be slightly elevated because her vitamin D level is not greater than 40 in the setting of gastric bypass surgery.

I really want to make sure that she is absolutely got the diagnosis before we have her going get a surgical procedure. The gastric bypass patients can run into a lot of difficulty particularly if they suffer any damage to remaining parathyroid glands because of difficulty with absorbing calcium and vitamin D.

Additionally the patient is on hydrochlorothiazide which could increase the fractional reabsorption of calcium and cause hypercalcemia. There are some reports that state, however, that this only really happens in people who have underlying hyperparathyroidism

Component	Ref Range & Units	2 d ago	3 wk ago	3 mo ago
Vit D, 25-Hydroxy	31 - 100 ng/mL	31	32 CN	38.7 R, CN

Comment: A REVIEW OF THE LITERATURE SUGGESTS THE FOLLOWING RANGES FOR THE CLASSIFICATION OF 25-OH VITAMIN D STATUS:

VITAMIN D STATUS	25-OH VITAMIN D
DEFICIENCY	<20 NG/ML
INSUFFICIENCY	20-30 NG/ML
SUFFICIENCY	31 - 100 NG/ML
TOXICITY	> 100 NG/ML

Calcium, ionized Order: 360815941

Visible to patient: Yes (seen) Dx: Hyperparathyroidism

0 Result Notes

Component	Ref Range & Units	2 d ago	3 mo ago
Calcium, Ionized	4.64 - 5.28 mg/dL	5.16	5.12 CN

Comment: IONIZED CALCIUM NORMALIZED TO PH 7.40 AND 37 DEGREES C.

Resulting Agency	LAB ALLIANCE OF CNY OPERATIONS CTR	LAB ALLIANCE OF CNY OPERATIONS CTR

Specimen Collected: 01/28/23 11:58 Last Resulted: 01/28/23 15:43

PTH, intact (non-OR only) Order: 361803912

Visible to patient: Yes (seen) Dx: Hyperparathyroidism

0 Result Notes

Component	Ref Range & Units	2 d ago	1 mo ago	3 mo ago
PTH	18.5 - 88.0 pg/mL	71.2	110.2 ^	92.2 ^

Resulting Agency	LAB ALLIANCE OF CNY OPERATIONS CTR	LAB ALLIANCE OF CNY OPERATIONS CTR	LAB ALLIANCE OF CNY OPERATIONS CTR

Specimen Collected: 01/28/23 11:58 Last Resulted: 01/28/23 16:08

Everything repeated after seeing Endocrine
All normal
Does NOT have Primary Hyperparathyroidism

Comprehensive metabolic panel Order: 361803918

Visible to patient: Yes (seen) Dx: Hyperparathyroidism

0 Result Notes

Component	Ref Range & Units	2 d ago	1 mo ago	3 mo ago
Sodium	136 - 145 mmol/L	146 ^	141	147 R
Potassium	3.5 - 5.1 mmol/L	4.1	4.5	5.0 R
Chloride	98 - 107 mmol/L	112 ^	100	100 R
CO2	20 - 31 mmol/L	25	34 ^	29 R
Anion Gap	7 - 16 mmol/L	9	7	18.0 ^
Urea nitrogen	9 - 23 mg/dL	16	12	13.0 R
Creatinine	0.55 - 1.02 mg/dL	0.73	0.88	1.0 R, C
BUN/Creatinine Ratio	10.0 - 20.0 RATIO	21.9 ^	13.6	
GLUCOSE	70 - 99 mg/dL	89	101 ^	95 R
Calcium	8.3 - 10.6 mg/dL	9.5	9.6	10.8 ^
Protein, Total	5.7 - 8.2 g/dL	6.4	6.4	7.0 R
Albumin	3.4 - 5.0 g/dL	3.7	3.5	4.0 R, C
Globulin	2.7 - 4.3 g/dL	2.7	2.9	3.0 R
Alb/Glob ratio	RATIO	1.4	1.2	
Alkaline Phosphatase	46 - 116 U/L	133 ^	115	126 R, C
Bilirubin, Total	0.0 - 1.0 mg/dL	0.8	0.4 CN	0.4 R

Just when I think I am all that …

I get knocked down

- 45 yr old Ukrainian female
- Referred from primary care
- Hypercalcemic for at least 2 years (10.5 - 11.1)
- PTH 99
- No family history of hypercalcemia
- Really completely asymptomatic despite thorough questioning
- Morning of surgery starting PTH 44
- All pre op imaging NEG (no obvious adenoma) - but this is daily event
- Four gland exploration - 4 tiny normal parathyroids identified and confirmed on frozen section

NOOOOOOOOO

BFHH

Benign Familial Hypocalciuric Hypercalcemia

- The differentiation between FHH and Primary HPP more difficult in the absence of family history of hypercalcemia
- Age at diagnosis of hypercalcemia and family history important
- Detection of asymptomatic hypercalcemia before the age of 40 favors (but certainly not diagnostic) of FHH
- To Diagnose
- Calcium / Creatinine excretion ratio is very low
- UCa x SCr / S Ca x U Cr - with FHH will be less than 0.01 in 80% of cases

HARVARD HEALTH BLOG

Angelina Jolie's prophylactic mastectomy a difficult decision

BRCA 1/2 …
Things have changed

ELSEVIER

Clinical Breast Cancer

Volume 20, Issue 3, June 2020, Pages e244-e250

Review

Breast Conserving Surgery for BRCA Mutation Carriers—A Systematic Review

Michael Co, Thomas Liu, Jason Leung, Chung Hin Li, Theo Tse, Michael Wong, Ava Kwong

18 studies reviewed
Overall survival and ipsilateral recurrence compared at 5, 10 and 15 years

Overall Survival at 5, 10 and 15 years were comparable

BCS was associated with greater rate of ipsilateral breast cancer recurrence in BRCA mutation carriers

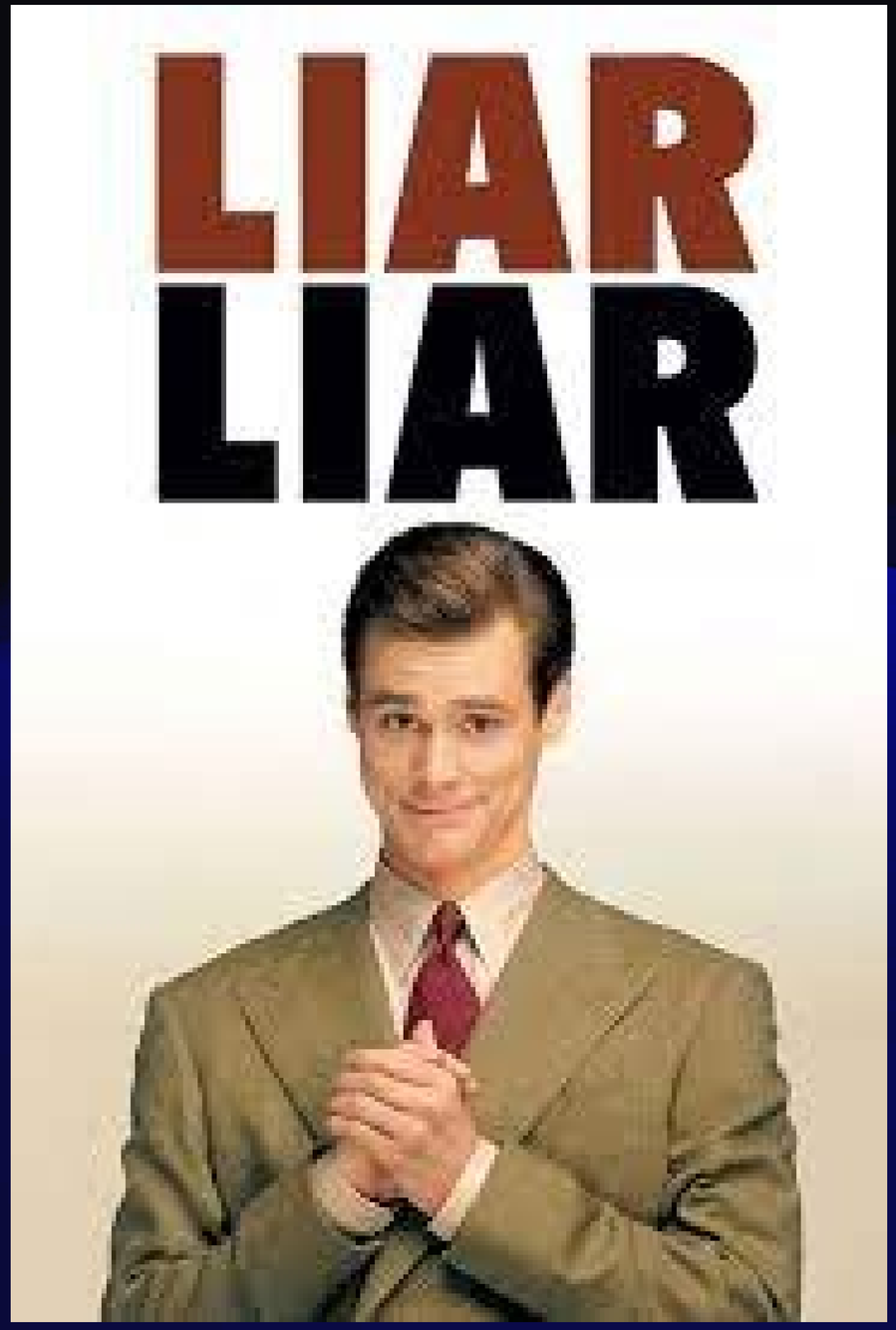
BCS was NOT associated with adverse short and long term survival outcomes

Abstract

Similar to mastectomy, breast conserving surgery (BCS) is currently the reference standard of surgical treatment of sporadic breast cancer in patients. However, its oncologic safety for BRCA mutation carriers has remained controversial. Thus, we conducted a systematic review to critically evaluate the best evidence from reported studies. A comprehensive search was performed of the Medline, EMBASE, CINAHL, and Cochrane databases using a predefined strategy. The retrieved studies were independently screened and rated for relevance. Data were extracted for qualitative synthesis in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses protocol for systematic reviews. No randomized controlled trial has directly compared BCS and mastectomy for BRCA mutation carriers. Of the 18 studies included in our review, the pooled analysis of overall survival at 5, 10, and 15 years were comparable between BCS and mastectomy (88.7%, 89.0% and 83.6% with BCS and 83%, 86.0%, and 83.2% with mastectomy, respectively). However, the pooled ipsilateral breast cancer recurrence rates at 5, 10, and 15 years were higher in the BCS group (8.2%, 15.5%, and 23%, respectively) than in the mastectomy group (3.4%, 4.9%, and 6.4%, respectively). BCS was associated with a greater rate of ipsilateral breast cancer recurrence in BRCA mutation carriers. However, it was not associated with adverse short- and long-term survival outcomes. BCS should be offered as an option to BRCA mutation carriers with proper preoperative counseling.

True Confessions of a Breast Cancer Surgeon

I am a liar and a hypocrite



Menopause: The Journal of The North American Menopause Society
Vol. 29, No. 7, pp. 767-794
DOI: 10.1097/GME.0000000000002028

NAMS Position Statement

The 2022 hormone therapy position statement of The North American Menopause Society

Abstract

"The 2022 Hormone Therapy Position Statement of The North American Menopause Society" (NAMS) updates "The 2017 Hormone Therapy Position Statement of The North American Menopause Society" and identifies future research needs. An Advisory Panel of clinicians and researchers expert in the field of women's health and menopause was recruited by NAMS to review the 2017 Position Statement, evaluate new literature, assess the evidence, and reach consensus on recommendations, using the level of evidence to identify the strength of recommendations and the quality of the evidence. The Advisory Panel's recommendations were reviewed and approved by the NAMS Board of Trustees.

Hormone therapy remains the most effective treatment for vasomotor symptoms (VMS) and the genitourinary syndrome of menopause and has been shown to prevent bone loss and fracture. The risks of hormone therapy differ depending on type, dose, duration of use, route of administration, timing of initiation, and whether a progestogen is used. Treatment should be individualized using the best available evidence to maximize benefits and minimize risks, with periodic reevaluation of the benefits and risks of continuing therapy.

For women aged younger than 60 years or who are within 10 years of menopause onset and have no contraindications, the benefit-risk ratio is favorable for treatment of bothersome VMS and prevention of bone loss. For women who initiate hormone therapy more than 10 years from menopause onset or who are aged older than 60 years, the benefit-risk ratio appears less favorable because of the greater absolute risks of coronary heart disease, stroke, venous thromboembolism, and dementia. Longer durations of therapy should be for documented indications such as persistent VMS, with shared decision-making and periodic reevaluation. For bothersome genitourinary syndrome of menopause symptoms not relieved with over-the-counter therapies in women without indications for use of systemic hormone therapy, low-dose vaginal estrogen therapy or other therapies (eg, vaginal dehydroepiandrosterone or oral ospemifene) are recommended.

Key Words: Breast cancer – Cardiovascular disease – Cognition – Genitourinary syndrome of menopause – Hormone therapy – Menopause – Vasomotor symptoms.

Post Menopausal HRT (hormone replacement therapy)

The Facts …

- HRT remains the most effective treatment for vasomotor symptoms and GU symptoms of menopause
- HRT has been shown to prevent bone loss and fracture
- There are risks
- Risks of HRT differ depending on type, duration of use , route of administration, timing of initiation and whether a progesterone used
- A quick deep dive …

- The famous WHI , was (is) largest RCT of women 50-79
- Was limited in some respects
- Just one route of administration looked at
- Limited enrollement of women with bothersome VMS symptoms who were less than 60 or fewer than 10 yrs from menopause
- THIS is the group for whom most indicated

- Formulations include Estrogens alone, Progestogens with estrogen (for women with intact uterus)
- Unopposed endometrial exposure to estrogen increases risk of endometrial hyperplasia and cancer
- Routes include:
  - Oral
  - Transdermal patches
  - Topical vaginal creams, inserts , rings

- Oral and transdermal patches similar in relieving VMS
- In WHI there was higher incidence of breast cancer in the estrogen plus progesterone group compared to placebo (small)
- In WHI there was lower incidence of breast cancer in the estrogen only compared to placebo
- Meta-analysis of studies in which most (70%) were aged older than 60 and had some co morbidity shows that EPT is associated with *small*

increases in the risk of

- a coronary event (after 1yr) , VTE (after 1 yr) stroke (after 3 yr) ,breast cancer (after 5 yr) and gallbladder disease (after 5 yr)
- While no good RCT data some trials show that in women 50-59 relatively healthy the only risk is that of VTE
- It is also thought that lower dose of ET may lessen risk of VTS

- Women in WHI aged 50-59 EPT or Estrogen alone did NOT increase cancer mortality or CV mortality after a median of 18 yrs follow up vs Placebo

Key point

- Hormone therapy is FDA approved for four indications: moderate to severe VMS; prevention of osteoporosis in postmenopausal women; treatment of hypoestrogenism caused by hypogonadism, BO, or POI; and treatment of moderate to severe vulvovaginal symptoms. FDA guidance for treatment of genitourinary symptoms related to menopause in the absence of indications for systemic ET suggests the use of low-dose topical vaginal ET. (Level I)

“ I take Bioidentical Hormones “

What are they and where do they come from

- 2 types
- Government approved and compounded bioidentical hormone therapies
- Government approved (in US and FDA approved) (estrone, estradiol and MP)are regulated and monitored for purity and efficacy
- Dispensed with package inserts, extensive product information (based on RCTs)
- Compounded bioidentical hormone therapies are prepared by a compounding therapist using a providers prescription
- They may combine multiple hormones, use untested ,unapproved combinations formulations and administered in non standard untested routes (subdermal implants, pellets etc)

Does HRT really help ?

IT does … trust me

- Vasomotor symptoms are associated with diminished sleep quality, irritability, difficulty concentrating, reduced quality of life and poorer health status
- Frequent VMS persisted on average 7.4 years in the Study of Women's Health Across the Nation and appeared to be linked to CV, bone and cognitive risks
- Multiple studies shown to help with sleep disturbances
- Shown to help with GU symptoms (use topical vaginal preparations when can)
- Vaginal estrogen shown to help with incontinence , overactive bladder and UTI
- Systemic and vaginal estrogen shown to help with sexual function

Hashimoto's Thyroiditis
Does surgery help ??

Letters in Applied NanoBioScience
Platinum Open Access Journal (ISSN: 2284-6808)

Article
Volume 9, Issue 3, 2020, 1208 - 1216
https://doi.org/10.33263/LIANBS93.12081216

Surgical Treatment of Hashimoto's Thyroiditis – Pros and Cons from the Perspective of Clinical Results

Viktor Olexandrovich Shidlovskyi [1], Olexander Viktorovich Shidlovskyi [1], Michael I. Sheremet [2,*], Larysa Petrivna Sydorchuk [3], Volodymyr Ivanovich Piatnochka [1], Vitaliy Vasilyevich Maksymyuk [2], Volodimir Volodimirovich Tarabanchuk [2], Yan Viktorovich Gyrla [2], Nina Petrivna Tkachuk [2], Oleksandr Vasilyevich Bilookyi [2], Oleh Havrilovich Harabara [2]

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Received: 15.05.2020; Revised: 9.06.2020; A

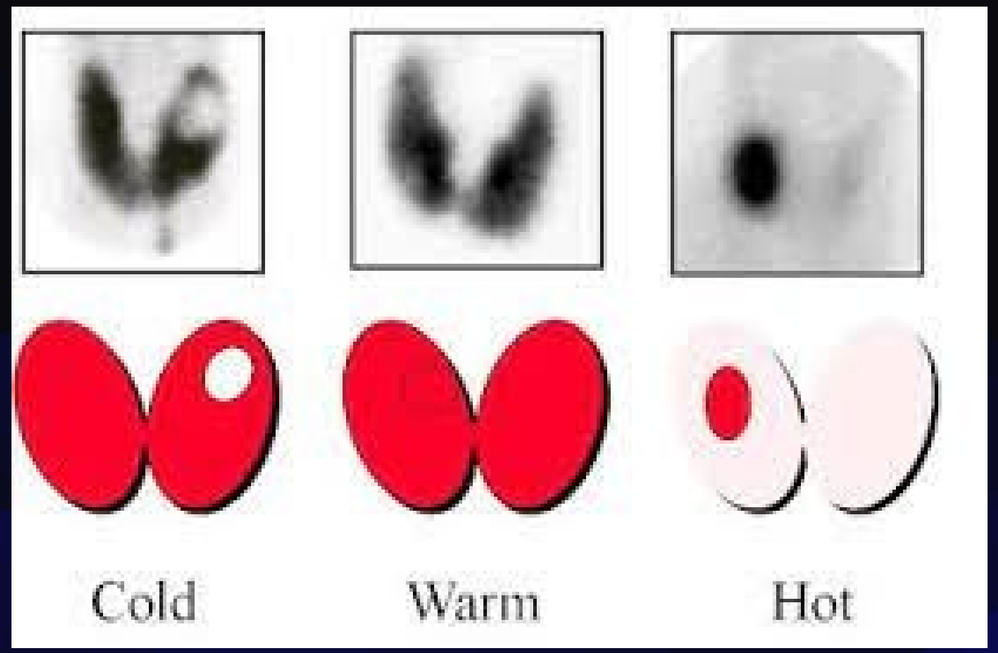
Abstract: Patients with Hashimoto's thyroiditis have hypothyroidism, goiter, and extrathyroidal lesions. Substitution therapy with thyroxine drugs in some cases is not effective. The work studies the feasibility of using surgical treatment – removal of the active site of autoimmune aggression. To study the effect of thyroidectomy on the quality of life of patients with Hashimoto's thyroiditis with extrathyroidal manifestations. Sixty-one patients with Hashimoto's thyroiditis were examined. Among them 29 patients were treated with drugs (control group) and 32 with surgery (main group). The quality of life was studied using the SF-36 questionnaire. TSH levels within euthyroidism were controlled and the level of antibodies to thyroperoxidase was determined. Two years after the surgical treatment, the studied quality of life indicators was improved significantly. The growth in individual indicators ranged from 34 (role-functioning, conditioned by emotional state) to 57 % (vital activity), and the overall health indicator increased by 52 %. The level of antibodies to peroxidase decreased almost to the norm. In the group of patients receiving drug treatment, overall quality of life indicators did not change significantly, but there was a tendency to worsen. The level of antibodies to peroxidase remained at high rates without significant changes. Surgical treatment of patients with Hashimoto's thyroiditis improves the quality of life. The level of antibodies to thyroperoxidase after thyroidectomy is reduced to almost physiologically significant indicators.

Keywords: Hashimoto's thyroiditis; quality of life; thyroidectomy.

Hyperthyroidism

TABLE 3. CAUSES OF THYROTOXICOSIS

Thyrotoxicosis associated with a normal or elevated RAI uptake over the neck[a]
GD
TA or TMNG
Trophoblastic disease
TSH-producing pituitary adenomas
Resistance to thyroid hormone (T_3 receptor β mutation, THRB)[b]
Thyrotoxicosis associated with a near-absent RAI uptake over the neck
Painless (silent) thyroiditis
Amiodarone-induced thyroiditis
Subacute (granulomatous, de Quervain's) thyroiditis
Palpation thyroiditis
Iatrogenic thyrotoxicosis
Factitious ingestion of thyroid hormone
Struma ovarii
Acute thyroiditis
Extensive metastases from follicular thyroid cancer



Thyroid nodule and bloodwork shows low TSH

Narrative & Impression

CLINICAL HISTORY: Screening. Abnormal labs.

COMPARISON: None available.

TECHNIQUE: High resolution ultrasound is performed of the thyroid gland.

FINDINGS: The right lobe of the thyroid gland measures 9.0 x 2.7 x 2.3 cm. Numerous nodules are present. Several of these are greater than 1 cm.. The largest is a 2.3 x 1.9 x 1.6 cm mid to lower pole inhomogeneous solid nodule.

The left lobe of the thyroid gland measures 8.3 x 4.6 x 3.2 cm. Numerous nodules are present. Several of these are greater than 1 cm. The largest are as follows:

1. Upper pole, medial, hyperechoic 3.1 x 3.3 x 2.0 cm.
2. Lower pole, hypoechoic, heterogeneous 3.1 x 2.6 x 2.8 cm.

The isthmus measures 1.1 mm.

The thyroid gland is homogeneous in echotexture.

IMPRESSION: Multinodular goiter. Determining which nodule if any to biopsy is difficult because of the multiplicity. A thyroid scan may be helpful to determine whether not there is a dominant "cold" nodule which would require biopsy.

Hyperthyroidism

Treatment options

- Beta blockade recommended for all symptomatic patients with hyperthyroidism- especially older patients or those with cardiovascular disease
- Methimazole (MMI) plus beta blockade VS MMI alone shown to have improved HR reduction , decr SOB, decr fatigue , better functioning on SF-36 questionnaire

TABLE 5. CLINICAL SITUATIONS THAT FAVOR A PARTICULAR MODALITY AS TREATMENT FOR GRAVES' HYPERTHYROIDISM

Clinical situations	*RAI*	*ATD*	*Surgery*
Pregnancy[a]	x	√√ / !	√ / !
Comorbidities with increased surgical risk and/or limited life expectancy	√√	√	x
Inactive GO	√	√	√
Active GO	[b]	√√	√√
Liver disease	√√	!	√
Major adverse reactions to ATDs	√√	x	√
Patients with previously operated or externally irradiated necks	√√	√	!
Lack of access to a high-volume thyroid surgeon	√√	√	!
Patients with high likelihood of remission (especially women, with mild disease, small goiters, and negative or low-titer TRAb)	√	√√	√
Patients with periodic paralysis	√√	√	√√
Patients with right pulmonary hypertension, or congestive heart failure	√√	√	!
Elderly with comorbidities	√	√	!
Thyroid malignancy confirmed or suspected	x	-	√√
One of more large thyroid nodules	-	√	√√
Coexisting primary hyperparathyroidism requiring surgery	-	-	√√

√√ = preferred therapy; √ = acceptable therapy; ! = cautious use; - = not first-line therapy but may be acceptable depending on the clinical circumstances; X = contraindication.

[a]For women considering a pregnancy within 6 months, see discussion in Section [T2].

TABLE 8. CLINICAL SITUATIONS THAT FAVOR A PARTICULAR MODALITY AS TREATMENT FOR TOXIC MULTINODULAR GOITER OR TOXIC ADENOMA

Clinical situations	*RAI*	*ATD*	*Surgery*
TMNG			
Pregnancy[a]	x	√√ / !	√ / !
Advanced age, comorbidities with increased surgical risk and/or limited life expectancy	√√	√	x
Patients with previously operated or externally irradiated necks	√√	√	!
Lack of access to a high-volume thyroid surgeon	√√	√	!
Symptoms or signs of compression within the neck	√	-	√√
Thyroid malignancy confirmed or suspected	x	-	√√
Large goiter/nodule	√	-	√√
Goiter/nodule with substernal or retrosternal extension	√	-	√√
Coexisting hyperparathyroidism requiring surgery	-	-	√√

√√ = preferred therapy; √ = acceptable therapy; ! = cautious use; - = not usually first line therapy but may be acceptable depending on the clinical circumstances; X = contraindication.

[a]For women considering a pregnancy within 6 months, see discussion in Section [T2].

For the most part toxic goiter and toxic adenomas (nodules) treated with surgery or I 131

What about “ subclinical “ hyperthyroidism

Sub Clinical Hyperthyroidism
Suppressed TSH , Normal Free T4
See it a lot
When to intervene …

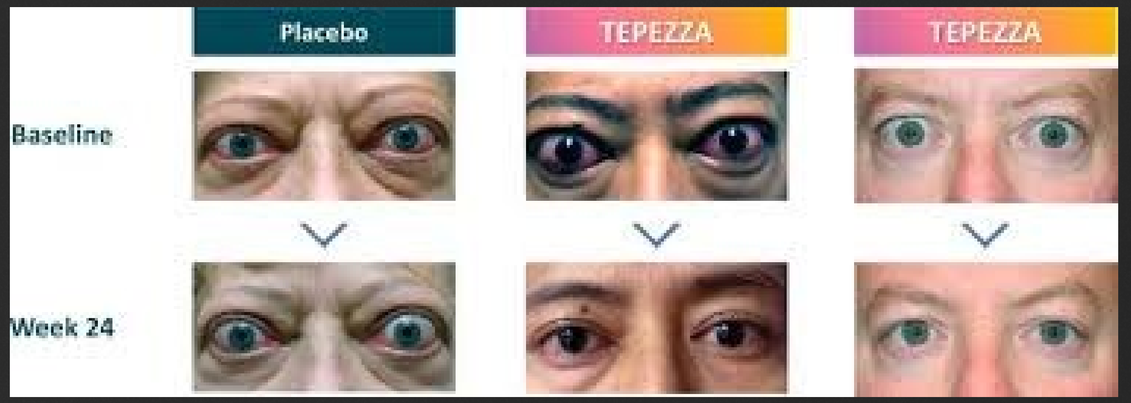
TABLE 10. SUBCLINICAL HYPERTHYROIDISM: WHEN TO TREAT

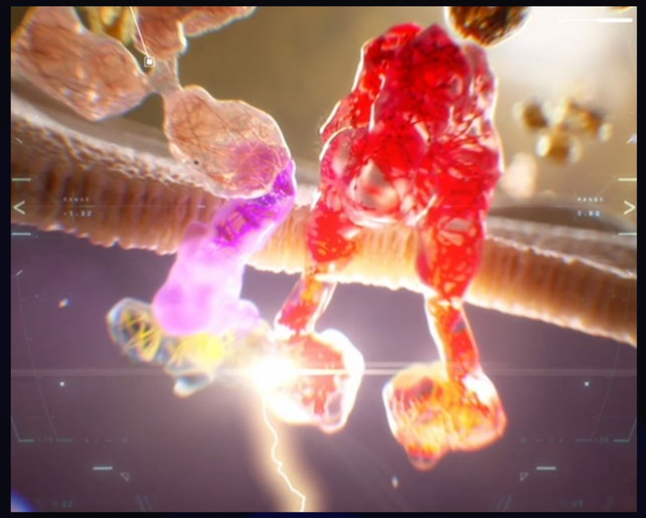
Factor	*TSH (<0.1 mU/L)*	*TSH (0.1–0.4 mU/L)*[a]
Age >65 years	Yes	Consider treating
Age <65 years with comorbidities		
Heart disease	Yes	Consider treating
Osteoporosis	Yes	Consider treating
Menopausal, not on estrogens or bisphosphonates	Yes	Consider treating
Hyperthyroid symptoms	Yes	Consider treating
Age <65 years, asymptomatic	Consider treating	Observe

[a]Where 0.4 mU/L is the lower limit of the normal range.

And speaking of hyperthyroidism

New hope for Thyroid Eye Disease

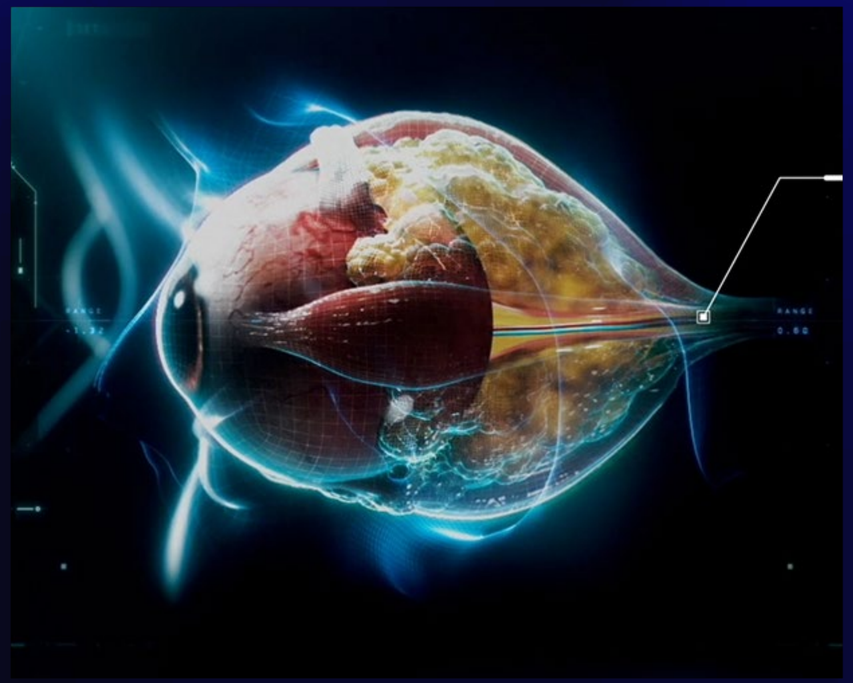




Autoantibodies stimulate this IGF-1/TSHR complex thus stimulating orbital fibroblasts

Once activated , orbital fibroblasts cause severe inflammation and expansion of tissue , muscle and fat behind the eye

Tepezza targets and blocks the IGF-1 and inhibits the fibroblasts from being stimulated by the IGF-1/TSH complex



The New York Times

NEW JERSEY DAILY BRIEFING

Banning 'Drive-By' Surgery

Give this article

By Terry Pristin
Jan. 28, 1997

See the article in its original context from January 28, 1997, Section B, Page 1 | Buy Reprints

1997

Everything old is new again …

The State Senate unanimously passed a package of bills yesterday that would prohibit "drive-by" mastectomies. Under the legislation, health insurance companies would be forced to pay for a woman to remain in the hospital for 72 hours after a radical mastectomy and 48 hours after a simple mastectomy. The bills would not apply to women who were covered by out-of-state insurance firms.

A co-sponsor of the bills, Sen. Peter A. Inverso, a Republican of Hamilton, said that women are often released from the hospital a day after breast cancer surgery. Under the proposed legislation, a woman could still leave a hospital a day after surgery, but only with her consent and that of her doctor. The bills now go to the Assembly. TERRY PRISTIN

Sometimes good comes from bad ....

Breast Oncology | Published: 03 May 2022

Home Recovery After Mastectomy: Review of Literature and Strategies for Implementation American Society of Breast Surgeons Working Group

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Annals of Surgical Oncology **29**, 5799–5808 (2022) | Cite this article

671 Accesses | **3** Citations | **14** Altmetric | Metrics

2022

- 30 years ago denounced as the “ drive by “ mastectomy
- Now not only more popular but many women now requesting and prefer
- Literature now to support its benefit or at least lack of detriment
- Part physicians trying to get cases done when restricted and part patients not wanting to be hospitalized
- Continued improvements in surgical technique and pain control
- Dramatic uptick in outpatient procedures (hips, knees, hysterectomy, cataracts (always was))
- 2016 NSQIP (National Surgical Quality Improvement Program) data showed that mastectomy patients who went home <24 h after procedure had lower rate of complications even after controlling for baseline characteristics , than those who stayed over night
- Contributing is improvement in pain and nausea
- No RCT but many centers reported their similar experiences

- Kaiser Permanente researchers demonstrated an increase in HRAM from 23-61% after implementation of home recovery program
- Surgeon volume and multimodal pain mgmt predictors of success
- 2nd study from Alberta Canada
- Similar dramatic rise from 1.7-48% with comprehensive program including nurses, surgeons, educators etc
- ASA Class III or IV , high BMI and sleep apnea likely not good candidates
- Must have support person at home
- Education about drains, pain expectations , bruising, drain output

Summary

To Re cap …

- The BIRADS-3, probably benign breast imaging result is common and almost NEVER proves to be a cancerous finding. Appropriate follow up however should be obtained.
- Overuse and recommendation for breast MRI is wrong, expensive, anxiety provoking, invasive and against national ACR recommendations
- Performing FNA of a SOLID breast mass is in most all cases wrong, frustrating for both patient and physician as it usually requires second repeat core biopsy (more pain, more anxiety , more money)
- Cancer phobia is real and prevalent . While the the incidence of breast cancer remains quite high and causes likely many we DO know that obesity is a proven risk
- As physicians we should use this knowledge to counsel patients on weight strategies to decrease the risk of a cancer they so fear
- Thyroid nodules are very very common. The VAST majority are benign and for those that are indeterminate , genomic testing can help prevent unnessary surgery

- Most thyroid cancer is relatively indolent and in certain low risk situations can be monitored conservatively. This is supported safely in the literature.
- We are making radiologists wealthy with all the endless thyroid US follow ups. We need to continue to communicate that much of this is overkill and stresses our patients and wastes healthcare dollars.
- Hyperparathyroidism can occasionally be tricky and the recognition of new phenotypes as well as other causes of elevated PTH and hypercalcemia can sometimes make it harder
- While definetely at increased risk of cancer occurrence , genetic mutation carriers do not HAVE TO have bilateral mastectomies
- HRT especially in women 50-60 is not a significant risk and can vastly improve quality of life
- Management of hyperthyroidism is not one size fits all
- Subclinical hyperthyroidism should be treated based on how low TSH is , age and cardiac risk
- Mastectomy surgery like many others is proving to be safe as an outpatient procedure

Thank you and feel free to …

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