Clinical Correlation of Thermographic Findings using Client History
Clinical History Taking

*Purpose*

- Defines disease risk
- Assists in interpretation of clinical data
- Important to outcomes measurement
- Important to new knowledge development (predictive)
Cardiac ischemia risk related to clinical history

Client A
- Dx left breast cancer
- Rx chemotherapy
- Rx radiation
- 2 years post Rx
- shortness of breath with physical exertion
- fatigue

Client B
- FHx diabetes, heart disease
- Dx pre-diabetes
- overweight
- high cholesterol

Client C
- Pulmonary disease

Client D
- insomnia
- chronic sinus congestion
Clinical History

Structure

♦ consistent
♦ comprehensive
♦ relevant
clinical knowledge
clinical "language"

Integrated
Medical-ese
Alternative-ism
Complimentarian
**Thermogram Hx:**
current type:
previous #:
last scan date:
previous scan results:

**Mammogram Hx:**
last mammogram date:
previous #/age:
mammogram results:

**Diagnoses:**

**Surgical history:**

**Female Medical History:**

**Other medical history/Lab:**

**Current medications:**

**Current symptoms:**

**Family History:**
Thermogram Hx:
current type:
--Initial breast thermogram
--baseline breast thermogram
--follow-up breast thermogram
--ROI: abdominal series
--ROI: head and neck

previous #: one

last scan date: 8/23/06

previous scan results:
--asymmetric hyperthermia LUO breast
--stable
**Mammogram Hx:**
last mammogram date: 8/23/06
<1 year
<5 years
>5 years

previous #/age: 8 starting at age 40

mammogram results:
--all past negative, according to client
--current calcifications LUO breast
Diagnoses/problems:
--fibrocystic breasts
--breast cancer Dx 5/11/07
--thyroid dysfunction
--acid reflux (GERD)
--IBS

Female Medical History:
--menses <12 and >50
--HRT x 20 years (Premarin)
--BCP x 10 years >20 years ago
--3 children birthed starting at age 21

Surgical history:
--complete hysterectomy 1987
--lumpectomy RUO breast 1992

Other medical history
--smoking x 10 years >5 years ago
--right ankle broken 2002

Lab history:
--CRP=hs (3/14/06) = 3.6 H (<1)
**Current medications:**
--Synthyroid x 15 years
--Tamoxifen x 10 months

**Current symptoms:**
--right breast pain and tenderness
--bilateral breast lumps
--insomnia
--postnasal drip
--fatigue
--weight gain
--shortness of breath

**Family History:**
--breast cancer: mother
--prostate cancer: MGF
--heart disease: father
--diabetes: MGM
--thyroid dysfunction: mother and MGM
<table>
<thead>
<tr>
<th>General symptoms</th>
<th>Cardiopulmonary symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue</td>
<td>Shortness of breath</td>
</tr>
<tr>
<td>Weight increase</td>
<td>Sleep apnea</td>
</tr>
<tr>
<td>Weight loss</td>
<td>Wheezing</td>
</tr>
<tr>
<td>Sensitivity to heat</td>
<td>Postnasal drip</td>
</tr>
<tr>
<td>Sensitivity to cold</td>
<td>Nasal congestion</td>
</tr>
<tr>
<td>Other_____________</td>
<td>Heart palpitations</td>
</tr>
<tr>
<td></td>
<td>other_____________</td>
</tr>
</tbody>
</table>
Breast symptoms

- Pain
- Tenderness
- Lumps/mass
- Thickening
- Secretions

Genitourinary symptoms

- Hot flashes
- Excessive menstrual bleeding
- Menstrual irregularity
- Excessive urination
- Pain with urination
- Other

Last mammogram date:_______
Other:_________________________
Gastrointestinal symptoms

- Heartburn
- Gas, bloating
- Constipation
- Diarrhea
- Abdominal pain
- Nausea
- Other____________________

Musculoskeletal

- Muscle cramps
- Muscle weakness
- Joint pain
- Joint stiffness
- Swollen joints
- describe body part
  ______________________
  ______________________
Nervous System
- Insomnia
- Headaches
- Dizziness
- Memory loss
- Loss of coordination
- other_________________

Psychoemotional
- Depression
- Irritability
- Mood swings
- Lack of sex drive
- Change in personality
- other_________________
- ____________________
Thermography Findings
4 years of stable breast scans

5/14/03  08/23/07

ID#: 9425
EMI report: 5/14/03
“There are no significant thermal asymmetries seen in the breasts. There is no indication of any neovascularity. This study is suitable to be archived and compared with a repeat study in three months to establish a baseline prior to annual testing.”

EMI report: 8/23/07
“There are no concerning thermal changes seen in this annual follow-up study. Thermal patterns and temperature differentials have remained stable from the comparison studies of 9/13/06 and 3/18/05.”
HRT Breast Evaluation

ID#: 
EMI report: 4/21/05

“There are significant thermal asymmetries seen in the breasts. There are areas of hyperthermia in both breasts, L>R, which are consistent with established fibrocystic changes. Additionally, the vascular patterns 12 o’clock in both breasts, L>R, are highly suspicious for neovascularity and active pathology. These thermal findings warrant immediate investigation before continuing with thermal follow-up to establish a baseline, particularly in view of the family history.”
Client History: 4/21/05
Sixty seven year old female on Premarin x 15 years without progesterone. Mother died of breast cancer at age 65. Last mammogram 4/03.

Clinical Studies ordered:
--Client refuses mammogram
--breast ultrasound negative

Follow-up lab results: 5/2/05

WBC = 3.0 L (4.0-11.0)
Hct = 45.7 H (37-47) (optimal 41-44)
DHEA-s = < 30 L (67 yr =50) (optimal =100)
Estradiol = 39 H (0-31)
CEA = 0.9 (0.0-2.5)
CA 27.29 = 14.3 (0.0-38.6)
Nocturnal pulse oximetry study results: 01/29/06

Nml SpO2 = > 90%
Nml HR < 70

Time <90 = 70.4%
Mean SpO2 = 87.8%
Lowest SpO2 = 43%

HR>70 = 0.4%
HR 50-59 = 81.3%

O2 started during sleep only at 2L/min

Clinical response:
1. Referred to PCP
2. Progesterone cream
3. I3C @ 400 mg/day
4. Breast ultrasound
5. Plan repeat thermo in 3 months
Initial breast scan 4/21/05
Stable scan comparison
11/29/05 to 5/14/07
(18 months between scans)
Client History: 8/27/07

Mammogram Hx
--7/31/03 “new partially defined densities in left breast periareolar region
--8/05/03 US showing “simple cysts”
--8/09/04 “stable, benign”
--8/10/05 “unchanging”

Female history:
--palpable mass periareolar region of left breast at 12 o’clock x 3 weeks

Lab ordered after scan:
--CA 27.29 drawn 8/27/07
“Thermal asymmetries are evident in the breasts... A generalized hyperthermic asymmetry is noted on the left. Specifically, a thermal focus is noted at the periareolar region and may relate to the reported stable simple cysts. More diffuse thermal patterns are evident in the upper left breast, including an area of circumscribed hypothermia at the 11:30 position. This appears consistent with an area of increased tissue density and warrants clinical correlation given the elevated cancer markers and presence of a palpable mass in the upper breast.”
Breast scan: added benefits

“perks!”
EMI report: 9/30/05

“Hyperthermia is present at the level of the thyroid in the anterior neck and should be correlated with the patient’s present thyroid status.”

11/18/05

TSH = 8.840
(0.35 – 5.5)
r/o sinus infection
8/29/05

post antibiotic Rx
11/16/05

ID#
Picture #1: pre-treatment 1/24/04

Picture #2: during treatment 4/22/04

Picture #3: during treatment 10/08/04 (8 months of treatment)

ID#: 12812
EMI report: 12/06/06

“Hypertherrmia is noted at the scapular tip on the left and may relate to the reported lung metastasis.”
Client History: 8/5/04
Dx of non-estrogen dependent LUQ breast cancer stage II in 1996 resulting in lumpectomy, chemotherapy and radiation to the left breast. Sixteen lymph nodes resected under left arm resulting in lymphedema.”

EMI report: 8/5/04
“The hypothermic regions over the heart and posterior thorax (left scapula to the flank) raise the question of cardiac ischemia. Further evaluation may be warranted.”
Nocturnal pulse oximetry study results: 9/23/04
Nml SpO2 = > 90%
Nml HR < 70

Time <90 = 83.1%
Lowest SpO2 = 78%

HR>70 = 90.5%

O2 started during sleep only at 2L/min

Cardiac Risk

ID#: 16000
Thermographic Findings and the Clinical Correlation Process

History is 50% of the process
Pay Attention to Details
Become a “Systems Thinker”
Breast Cancer Risk
Cancer Risk? Puzzling!

Detoxification Glucose Immune Oxygen Hormones
Mammogram Hx:
--last mammogram date: > 1 year ago
--total #: 10 starting at age 50
result comments:
--calcifications on left breast on last mammogram

Female History:
--HRT x 4 years
--BCP x 2 years > 30 years ago
--2 children birthed starting at 30

Diagnoses/clinical concerns:
--hypothyroid on medication x 5 years

Current medication:
--Levoxyl x 5 years

Current symptoms:
--no breast Sx described
--insomnia

Family History:
--breast cancer: none known

EMI report: 5/14/07
“There are vascular patterns in the left breast cascading inferiorly toward and beyond the nipple. These findings should be closely monitored especially in view of the calcifications on mammogram. . . The thermal findings in the left breast should be considered at some risk for developing pathology.”
Clinical Correlation/Suggestions: thermogram date: 5/14/07

Studies suggested:
- Repeat thermogram: 3mo. ✓ 6mo. ✓ Annual ✓
- Last mammogram: 2005
- Mammogram: ✓
- Breast ultrasound: ✓
- Biopsy (mass): ✓
- Thyroid study: ✓
- Dental evaluation: ✓
- Abdominal/GI study: ✓
- Carotid artery study: ✓
- Cardiac study: ✓
- CXR: ✓
- Nocturnal room air pulse oximetry study: ✓

Comments: ____________________________________________________________________________

Lab suggestions:
- CEA ✓ CA 27.29
- CA 15.3
- CA 19-9
- CA 125
- HCG
- Prolactin
- CBC (w/diff) ✓ Fibrinogen
- PT
- PTT
- Chem panel (w/liver functions) ✓ GGT
- Thyroid panel
- TSH
- Thyroid Antibodies (i.e. TPO, anti-thyroglobulin, anti-microsomal)
- Cortisol: 8am
- Cortisol: 4pm
- Insulin & glucose: Fasting
- 2hr pp
- HbA1C
- Lipid Panel
- Homocysteine
- CRP-HS (high sensitivity)
- H. Pylori
- DHEA-s (sulfate) ✓ Progesterone ✓ Estradiol ✓ Esterone
- Testosterone
Nocturnal pulse oximetry study results:
Nml SpO2 = > 90%
Nml HR < 70
Time <90 = 48.5%
Lowest SpO2 = 22%
O2 started during sleep only at 2L/min

Follow-up lab results:
WBC = 6.3 (2.9-10.5) (optimal=5-7)
Hct = 45.3 H (35-49) (optimal=40-44)
Progesterone = 0.4 L (0-0.7) (optimal>1)
Estrogen = 20 (0-44.5) (optimal <20)
DHEA-s = 103 (optimal 100-150)
Glucose = 82 L (73-99) (optimal 85-95)
AST = 32 H (17-49) (optimal=26)
ALT = 27 H (12-46) (optimal=24)
Oxygen x 3 months prior to follow-up scan
5/14/07 to 8/27/07

EMI report: 8/27/07
“There are thermal changes seen in routine follow-up study. The thermal patterns in the left breast have decreased to a small focal area in the left upper inner quadrant. The temperature differentials have remained stable. It is uncertain what the effect of sleep apnea may have had on the first study. Because a baseline has not been obtained, a repeat study in six months is recommended.”
Breast Cancer Risk
Clinical Response to potential cancer risk:

- mammogram, ultrasound, MRI
- CBC with diff, CEA, CA27.29, chemistry panel
- nocturnal pulse oximetry study

ID#48848
Breast Average Temperature Comparison
(R= 33.84 C and L=32.58 C)
Lymph Node Comparison
Maximum Temperature
(R=37.0°C and L=35.1°C)
**Mammogram Hx:** < 5 years ago
--Last mammogram date: 3/24/04
--7 mammograms starting age 25
--repeat mammogram right breast, with negative results

**Female History:**
--fibrocystic breast disease
--BHRT x 3 years, off x 5 years
--one child birthed at age 26

**Surgical history:**
--uterine fibroid removed 1985

**Diagnoses:**
--hypothyroid Dx 1983

**Current medication:**
--Synthroid x 14 years
--Armour thyroid x 16 years
--Nexium x 5-6 months
--I3C x 7 years

**Family History:**
--breast cancer: mother, MAunt
Current symptoms:
--right breast pain, tenderness, lumps
--dimpling right inner side of breast nipple
--heartburn and constipation

Family History:
--breast cancer: mother, MAunt
--thyroid dysfunction: mother
Clinical Correlation/Suggestions:

Studies suggested:
repeat thermogram 3mo. ___ 6mo ___ annual ___
last mammogram 3/24/04 mammogram ___ breast ultrasound ___ biopsy (mass) ___
thyroid study ___ dental evaluation ___ abdominal/GI study ___ carotid artery study ___
cardiac study ___ CXR ___ Nocturnal room air pulse oximetry study ___

comments: _______________________________________________________________________

Lab suggestions:
CEA ___ CA 27.29 ___ CA 15.3 ___ CA 19-9 ___ CA 125 ___ HCG ___ Prolactin ___
CBC (w/diff) ___ Fibrinogen ___ PT ___ PTT ___ Metabolic panel (w/liver functions) ___ GGT ___
Thyroid panel ___ TSH ___ Thyroid Antibodies ___ (i.e. TPO, anti-thyroglobulin, anti-microsomal)
Cortisol: 8am ___ Cortisol: 4pm ___ Insulin & glucose: Fasting ___ 2hr pp ___ HbA1C ___
Lipid Panel ___ Homocysteine ___ CRP-HS (high sensitivity) ___ H. Pylori ___
DHEA-s (sulfate) ___ Progesterone ___ Estradiol ___ Esterone ___ Testosterone ___
PSA ___ comments: _______________________________________________________________________

ID#48848
Breast ultrasound report: "findings suspicious for lobular carcinoma"

CEA = 2.6 (0.0-2.9)
CA 27.29 = 17 (0-38)

Nocturnal pulse oximetry study results:
Nml SpO2 = > 90%
Nml HR < 70

Time <90 = 52.1%
Lowest SpO2 = 81%

HR >70 = 42.3%

O2 started during sleep only at 2L/min
Biopsy of right breast 8/30/07 positive for ER+ breast cancer (pathology report pending)

EMI report: 8/23/07
“The thermal findings in the right breast are concerning for active pathology and warrant further investigation on an urgent basis.”
Gastrointestinal Concerns
EMI report: 10/18/02

“There is localized hyperthermia over the epigastrium and subcostal areas, and non-specific hyperthermia coursing vertically over the lateral abdomen. . . the non-specific patterns may correlate with physiological changes in subadjacent abdominal viscera, such as the stomach, pancreas, colon, and small intestine, especially given her history of diagnosed inflammatory bowel disease. The horizontal hyperthermic pattern over the mid-abdomen does not correspond to any anatomic structure in the abdomen and is unlikely clinically significant.”
IBS patient
5 days on Aloe Vera Juice
IBS patient
Treatment
13 days with Aloe Vera Juice

10/17/02

10/22/02

10/30/02
Gastrointestinal Concerns
Lab draw 2/13/07  H. Pylori
Dx after thermography results 12/19/06
Gastrointestinal Concerns
McBurney's point
RLQ pain

WBC (5/22/07) = 20.4 H (3.5-10.6)
Neutrophils% = 91.6 H (40.0-60.0)
Lymphocytes = 6.0 L (22.0-44.0)

EMI report: 5/31/07
"Hyperthermia is noted in the lower abdomen lateralizing towards the right...suggestive of inflammatory activity involving the colon, specifically the cecum or the appendix. The thermal findings are consistent with, but not diagnostic of, an inflammatory process that involves the appendix. The reported Hx of 3 weeks symptomatology, elevated but decreasing WBC, and negative CT are inconsistent with acute appendicitis. However, chronic appendicitis is a less common but described clinical entity and laparotomy may be beneficial."
Hyperthermia is noted in the lower abdomen lateralizing towards the right...suggestive of inflammatory activity involving the colon, specifically the cecum or the appendix. The thermal findings are consistent with, but not diagnostic of, an inflammatory process that involves the appendix. The reported Hx of 3 weeks symptomatology, elevated but decreasing WBC, and negative CT are inconsistent with acute appendicitis. However, chronic appendicitis is a less common but described clinical entity and laparotomy may be beneficial.

- WBC (5/22/07) = 20.4 H (3.5-10.6)
- Neutrophils% = 91.6 H (40.0-60.0)
- Lymphocytes = 6.0 L (22.0-44.0)
Pathology Report: 6/11/07

“The appendix is elonged as it measures 11.2 cm. Although no acute inflammation is identified, the length of the appendix may have contributed to pain felt by the patient.”

Surgeon’s note to PCP: 6/27/07

“The appendix on the pathology report is normal, however is markedly elongated and may have been kinking; however, he is feeling much better and feels like the trip is worthwhile.”
Comparison 5/31/07 to 8/30/07
post appendectomy result
We are yet again reminded that “a picture is worth a thousand words. . .”
Thank you for your attention