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Pathology Update

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Cytology Updates

New Platform for Cytology testing at SaraPath Diagnostics

We are now doing in house HPV testing using the *Hologic Aptima Panther* system. This system has many benefits. Firstly, it tests for 14 high risk HPV viral E6 and E7 mRNA which is thought to be more specific for a significant infection.

In addition, there is a reported decrease in false positives.

The test uses a smaller volume of fluid and the system is more automated allowing for technologist flexibility.

Specific high risk genotyping is available for HPV 16 and HPV 18/45 after a positive HR HPV screening in certain patients. In house correlation with the previous method (Digene hybrid capture system DNA based) showed excellent correlation.

Other testing is possible on this platform out of the same tube. We perform GC/Chlamydia testing, and have now added Trichomonas testing to the panel.



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Service Announcements

While there are many changes taking place on the Medicare and healthcare landscape, please note that SaraPath Diagnostics is still contracted as an in-network provider with all major insurers. If you have any insurance or billing questions, please contact our Billing Administrator directly at 362-8923.

You can also download a complete insurance list from our web site at www.sarapath.com.



SaraPath Diagnostics has a variety of electronic connectivity solutions for electronic ordering and reporting.

If interested, please call our Client Service Center at 362-8900.



Images: SaraPath, internet

Special Points of Interest

- Panther HPV
- Service Announcement
- Her-2/neu Updates
- Cytology FISH
- ABP Boards
- Interesting case

ASCO-CAP Her-2 Test Guidelines

Ancillary testing in breast carcinoma is an essential part of the tumor workup. This includes ER, PR and Her-2/neu by immunostains and Her2-/neu by FISH or other methods. Accurate testing is essential.

In December 2013, updated guidelines for Her-2/neu testing were issued and summarized below.

Testing to be performed on new and metastatic sites.

Testing facilities need to validate test initially, perform concordance testing between methods with 95% concordance and perform external proficiency testing CAP surveys.

Optimal fixation times for Her-2/neu are: 6 to 72 hours (**prior 48**) for excisions similar to ER/PR. Exceptions need to be indicated in report.

IHC Scoring

- Indeterminate: Technical issue e.g. inadequate specimen handling, crush/edge artifact, testing failure
- 0(negative): No staining or membrane staining that is incomplete and is faint/barely perceptible and within $\leq 10\%$ tumor cells
- 1+(weak): Incomplete membrane staining that is faint/barely perceptible and within $>10\%$ of tumor cells
- 2+(equivocal): Circumferential membrane staining that is incomplete and/or weak/moderate and within $>10\%$ of tumor cells or complete and circumferential membrane staining that is intense and within $\leq 10\%$ of tumor cells
- 3+(positive): Circumferential membrane staining that is complete, intense and within $>10\%$ of tumor cells (**prior 30%**)

FISH testing results

- Indeterminate: Technical issue e.g. inadequate specimen handling, crush/edge artifact, testing failure
- Negative: HER2/CEP17 ratio of <2.0 (**prior < 1.8**) with an average HER2 copy number <4.0
- Equivocal: HER2/CEP17 ratio of <2.0 (**prior 1.8-2.2**) and an average HER2 copy number of ≥ 4.0 and <6.0
- Positive: HER2/CEP17 ratio of ≥ 2.0 (**prior 2.2**) and average HER2 copy number of <4.0 signals or >4.0
- Polysomy positive: HER2/CEP17 ratio of <2.0 with an average HER2 copy number ≥ 6.0
- Heterogeneous positive: HER2/CEP17 ratio of ≥ 2.0 and average HER2 copy number of <4.0 or >4.0

Reference:

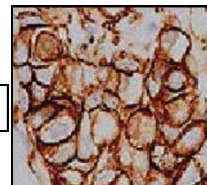
ASCO/CAP Guideline for Her2 Testing in Breast Cancer

Wolff AC, Hammond MEH, Hicks DG, et al. Recommendations for :

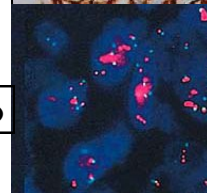
Human Epidermal Growth Factor Receptor 2 Testing in Breast Cancer.

Arch Pathol Lab Med. doi: 10.5858/arpa.2013-0953-SA.

3+ IHC



FISH AMPLIFIED



Equivocal findings and possible suggestions

If Her2 testing is 2+, reflex to FISH. Exceptions are made to this locally as per SMH Cancer Committee with other cases.

Occasionally the Her2 IHC is equivocal and the FISH is equivocal.

If test was performed on biopsy, then suggest retesting on tumor from excision specimen or a different block from biopsy or excision.

If still equivocal, consider alternative method for Her2 testing (FISH with a different CEN17 probe or possibly RT PCR).

Images: Internet, SaraPath

Molecular Corner

The NeoDiagnostix Cervical DNA DTex test uses probes to telomerase RNA component (TERC) gene at 3q26, telomere reverse transcriptase gene (TERT) at 5p15 and a CEN 7 probe.

In a normal undamaged cell there should be 2 signals for each probe. In an abnormal cell, there are often multiple signals for TERC and TERT. Gains of TERT are associated with HSIL and cancer. Gains of TERC are associated with transition to SCC. Both can be associated with vaginal, vulvar and other carcinomas.

This test could be an adjunct to HPV testing in certain patients that are clinically suspicious. Specific uses might be for pap LSIL or ASCUS HPV+. Sometimes also on normal HPV+, ASC-H or HSIL.

Testing can be performed on the residuum of the thin prep or SurePath material.

We are considering offering this test through SaraPath depending on the interest from GYN clinicians.

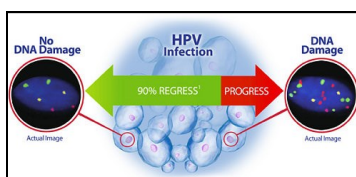


Image: Internet

Senile amyloidosis of seminal vesicle

Discussion: somewhat rare incidental finding in elderly male patients. This is not accompanied by any systemic amyloidosis. It is referred to as a localized amyloidosis.

Amyloid: Protein deposit composed of 95% amyloid fibril and 5% P component and other glycoproteins and leading to beta pleated sheet conformation Results from an abnormal folding of proteins.

Primary amyloidosis, : AL amyloid light chain derived from plasma cells and contains immunoglobulin (myeloma and primary amyloidosis).

Reactive systemic amyloidosis, : SAA (AA) protein from liver . Associated with chronic diseases, such as tuberculosis, rheumatoid arthritis or osteomyelitis.

Pathologists' ABP Board Certification

Congratulations!

Voluntary board recertification has been successfully completed by Dr. McCormack, Dr. Reed, Dr. Hennessy, Dr. Zacks and Dr. Gaertner through 2024.

All Pathologists at SaraPath Diagnostics are board and subspecialty board certified.



Student Rotations

The Pathologists at SaraPath are *Associate Professors* with *Florida State University*. Students rotate in the pathology department from the *Florida State Univ. College of Medicine*. The medical students receive credit for a month rotation usually in their 4th year. Also, SaraPath participates with *Pine View High School*, to allow high school students to do an informal rotation to see the range of what a pathologist does.

If the underlying disease is treated, this form of amyloidosis will go away.

Hemodialysis associated: Long term deposition of B2 microglobulin.

Heredofamilial amyloidosis: Familial mediteranean fever, amyloidotic polybneuropathies.

Localized (this case) or lung, bladder, skin, eye, endocrine (e.g. medullary thyroid carcinoma), islets in pancreas.

Amyloid of aging (senile systemic, cardiac,- tranthyretin, cerebral- Alzheimer's AB).

Refs: Internet, Pubmed, Robbins 7th Ed.



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Images: SaraPath

60 year old male with prostatectomy for carcinoma

