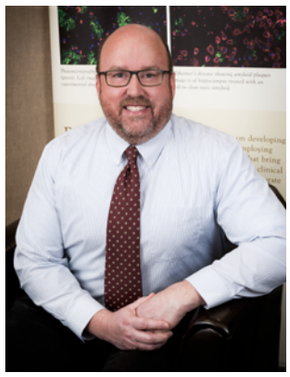
Stanford MEDICINE | Department of PATHOLOGY **Alumni News**

Volume 2
Issue 2, April 2018

From the Chair

The Stanford 'Scene' at the 107th USCAP Annual Meeting



Dear alumni, trainees and faculty,

Stanford trainees and faculty were well represented at this year's annual USCAP meeting held in beautiful (but chilly) Vancouver, British Columbia, Canada. In addition to a timely long course on limited sampling in aspirates, biopsies, and intraoperative consultations (aka "doing more with less"), highlights of the week included 5 platform presentations and 22 poster presentations by Stanford residents and fellows, with contributions from members of the department on a number of additional abstracts. On Sunday, alumni from near and far mingled over cocktails and hors d'oeuvres at The Annual Stanford Pathology Reception held at the Pan Pacific Hotel (see photos). We cherish our alumni attendance at this event – we get to see so many old friends! At our other annual USCAP highlight event, residents, fellows, and faculty celebrated months of preparation over dinner at Pidgen (see photos).

Next year, the 108th USCAP Annual Meeting will be at the Gaylord National Resort & Convention Center in National Harbor, Maryland, from March 16-22, 2019.

Sincerely,
Tom Montine, MD, PhD,
Chair, Stanford University Department of Pathology

USCAP 2018, left to right: Jeffrey Cloutier, Hubert Lau, Natasha Darras, Kelly Devereaux, Keegan Barry-Holson, Nick Sinosky, and David Levy

USCAP 2018, left to right: Kurt Schaburg, David Levy, Keegan Barry-Holson, Hubert Lau, Teri Longacre, Sunny Kao, Linda Ferrell, and Kristin Jensen

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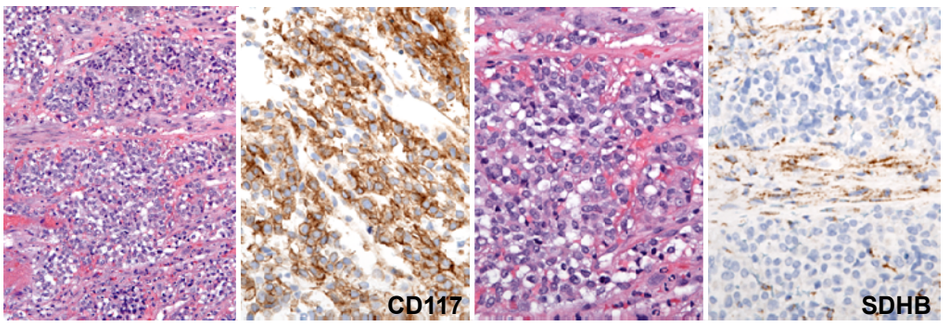
Critical Tips and Diagnoses (CRITDers)



AP Case

74-year-old woman with melena underwent endoscopic biopsy of a 4-cm ulcerated mass of the gastric antrum.

Differential Diagnosis: Adenocarcinoma, neuroendocrine tumor, gastrointestinal stromal tumor (GIST), glomus tumor, perivascular epithelioid cell tumor (PEComa), lymphoma.

Final Diagnosis: Succinate dehydrogenase-deficient GIST.

H&E-stained sections show a submucosal epithelioid neoplasm consisting of cells with ill-defined cell borders and cytoplasmic vacuolization arranged in sheets and nests. The nuclei are predominantly vesicular and exhibit only a moderate degree of pleomorphism. The overlying antral-type epithelium shows no evidence of in situ epithelial dysplasia. By immunohistochemistry, the lesional cells do not express cytokeratin, CDX2, HMB45, or markers of neuroendocrine differentiation. There is diffuse expression of DOG1, and patchy expression of CD117. An immunohistochemical stain shows loss of expression of succinate dehydrogenase subunit B (SDHB) in the neoplastic cells with retained expression in adjacent endothelium.

AP Critical Tip: SDH-deficient GISTs represent a clinico-pathologically distinct subset characterized by epithelioid morphology, gastric location, multinodular growth, and a predilection for lymphovascular invasion. The clinical behavior and prognosis of SDH-deficient GISTs is not accurately predicted by conventional measures of risk assessment, such as size, proliferation rate, and anatomic location. Additionally, SDH-deficient GISTs exhibit primary resistance to imatinib. Therefore, we routinely screen gastric GISTs for SDH deficiency by immunohistochemistry. Loss of SDHB expression is a surrogate marker for loss of the entire succinate dehydrogenase enzymatic complex; it indicates a deficiency of at least one of the four SDH subunits (A-D) and does not necessarily signify loss of SDHB itself. In fact, SDHA is the most frequently mutated subunit.

References: Charville, GW, Longacre, TA. *Surgical Pathology of Gastrointestinal Stromal Tumors: Practical Implications of Morphologic and Molecular Heterogeneity for Precision Medicine.* Adv Anat Pathol. 2017;24:336-353.

Contributors: Greg Charville and Teri Longacre

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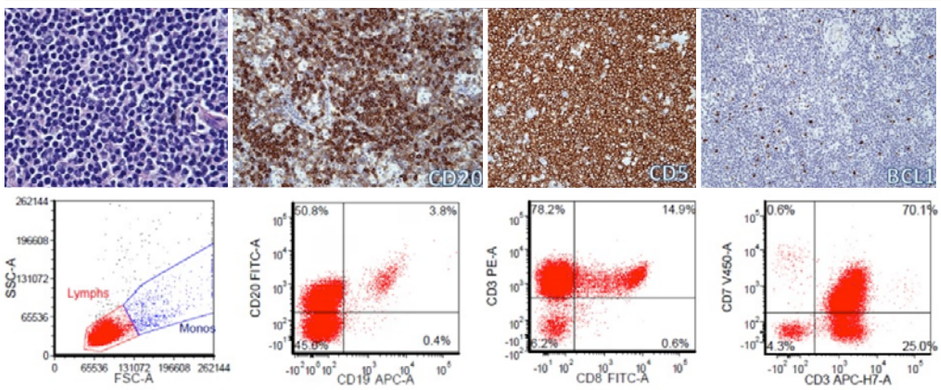

CP Case

65-year-old man with a reported history of chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL), with persistent lymphadenopathy underwent an excisional lymph node biopsy. Flow cytometry is performed.

Differential Diagnosis: CD19 negative B-cells versus CD20 positive T-cells (B-cell lymphoma vs. T-cell lymphoma).

Final Diagnosis: Peripheral T-cell lymphoma, NOS.

H&E stained sections show effacement of the lymph node architecture by a sheet-like proliferation of small to medium size lymphocytes with clear cytoplasm. A CD20 and CD5 immunohistochemical stain are positive, while a BCL1 (and SOX-11, not shown) are negative, thus far, consistent with CLL/SLL. Flow cytometry, however, demonstrates a CD19 negative population with dim expression of CD20. Approximately 95% of cells in the lymphocyte gate are positive for CD3, indicating that these CD19 negative/CD20 dim cells are T lymphocytes. These abnormal T-cells also show partial loss of CD7 and variable CD8 expression, with no CD4 expression.

CP Critical Tip: CD20 positivity can be rarely seen in T-cell lymphomas, and can mimic a CD5 positive B-cell lymphoma in the absence of additional T-cell markers. In this case, a CD3 was not initially available leading to the patient to be diagnosed with CLL/SLL. Of note, a small subset of CD20 positive T-cells can be seen in the peripheral blood and bone marrow of healthy patients, however, CD20 positive T-cells in the lymph node should be considered abnormal.

References: Reference: Hultin LE, Hausner MA, Hultin PM, Giorgi JV. CD20 *(Pan-B cell) Antigen is Expressed at a Low Level on a Subpopulation of Human T lymphocytes*. Cytometry 14:196-204

Contributors: Jenny Hoffmann and Susan Atwater

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Alumni, Trainee, & Faculty Developments

Alumni

Tracy George, MD (2001)
After completing surgical pathology training in 1999 and a hematopathology fellowship in 2001, Tracy rejoined the Stanford Department of Pathology from 2002 to 2012. She spent the next 5 years at the University of New Mexico as Division Chief of Hematopathology and Director of the Hematopathology Fellowship Program, and then concurrently became Vice Chair of Clinical Affairs for the Department of Pathology and Medical Director for the Genetics and Cytometry Laboratories at TriCore Reference Laboratories. In 2018, Tracy joined the University of Utah as a Professor of Pathology in the Hematopathology Division and became the Executive Director of Clinical Trials and PharmaDx at ARUP Laboratories. Tracy also serves as a Medical Advisor for The Mastocytosis Society and Vice President for Scientific Communications for the International Society for Laboratory Hematology. At home, she enjoys spending time with husband, Chris, and 6-year-old daughter, Annika.

Matthew O. Leavitt, MD (2007)
After completing anatomic pathology residency (2005) as well as surgical pathology (2006), and hematopathology fellowships (2007) at Stanford, Matt has kept himself quite busy. He is best remembered as one of the kindest, most decent guys you will ever know, but according to him, he is just "that guy married to Louise, with all those little boys". To be fair, there are a lot: Matthew (now 22), James (21), Dixie-John (20), Hyrum (18), Joseph (16) and Oscar (14). Working with Dana Bangs in a cytogenetics rotation, it was revealed that he actually does possess the X-chromosome, which was later confirmed by the births of Sarah (10) and Abbie (8). Finally (or perhaps not), three years ago, Vivienne Mei (6) also joined the family.

Matt left Stanford to take a position at Intermountain Healthcare, serving as Pathology Chair in the Urban South Regional Medical Center. In 2014, he left the group to establish a technology company, LUMEA, which focuses on the development of a novel pre-analytic digital workflow to forward the practice of digital pathology. He is the Chief Medical Officer of that company, which now employs 25 people. He still enjoys the practice, serving as medical director of the LUMEA laboratory, the first end-to-end digital anatomic pathology lab. He considers his experience at Stanford "one of the great blessings in my life".

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Trainees

Joshua Segal, MD

Joshua is completing his surgical pathology fellowship and rounding out his anatomic and clinical pathology training with an additional year at Stanford as a cytopathology fellow. He would like to continue playing a role in resident teaching once he is out in practice, either in the community setting or at a VA Medical Center. His primary interests are in clinical service and teaching. His goal is to continue to interact with residents and medical students while practicing general surgical pathology, cytopathology, and autopsy.

Albert Tsai, MD, PhD

Albert is originally from southern California and came to the Stanford anatomic and clinical pathology residency program from the University of Southern California combined MD, PhD program. He completed his thesis work in the laboratory of Michael Lieber, MD, PhD, studying the molecular mechanisms of chromosomal rearrangements in lymphomas and leukemias. As the first chief resident for informatics, he built the pathologists.stanford.edu resource and scheduling site essential to the daily functioning of the department of pathology, whilst simultaneously analyzing next generation whole genome sequencing data of systemic mastocytoses with Jason Merker. Now a hematopathology instructor and postdoctoral scholar in the laboratory of Sean Bendall, PhD, he works on next generation immunophenotyping (CyTOF mass cytometry and Multiplexed Ion Beam Imaging), for which he was awarded a Damon Runyon Cancer Research Foundation fellowship as well as a pair of internal department grants. His current research involves development and optimization of mass immunophenotyping reagents and methods for clinical use, as well as associated computational tools, which he hopes to use to study the molecular biology of tumor morphology and dysplasia. When not in the laboratory or hospital, he may be found running or cycling in what seems (fitness-wise) like the bottom quartile of the department, scavenging the free food which necessitates those activities, waiting accidentally and chronically in the worst line at the grocery store, or debating the cost-effectiveness of commuting by helicopter vs. living nearby.

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Faculty

Benjamin Pinsky, MD, PhD (Virology)

Ben completed his clinical pathology residency at Stanford in 2010, the third year of which he spent as a Molecular Genetic Pathology Fellow. He then succeeded his mentor Dr. Ellen Jo Baron, as medical director of the Stanford Clinical Virology Laboratory, a position he continues in today. Ben is now an Associate Professor of Pathology and Medicine, Division of Infectious Diseases and Geographic Medicine, in the Medical Center Line. His research focuses on the development and evaluation of diagnostics for infectious diseases, with particular interest in arthropod-borne viruses such as dengue and Zika. This work allows him the opportunity to travel throughout the world and engage in activities to improve global health. Ben lives in San Francisco with his wife, Thuy, an academic physician at UCSF. He enjoys catching up on audiobooks and podcasts on his daily commute, sweating profusely at regular cross-fit workouts, and rooting unconditionally for his generally mediocre hometown Detroit professional sports teams.

Megan Troxell, MD, PhD
(Breast, genitourinary, and renal pathology)

Megan completed medical and graduate school along with anatomic pathology residency and surgical pathology fellowship at Stanford, then spent almost 11 years on faculty at Oregon Health & Science University in Portland. She returned to Stanford in December 2015 and is now the director of the surgical pathology fellowship. Her clinical and research interests include the rather divergent fields of breast, medical kidney and GU pathology. She appreciates working with the fantastic trainees. Outside of the hospital, she enjoys the coastal foothills by bicycle.

Notable Pathology Events Featuring Stanford Pathologists

Napa Valley Pathology Conference
Napa, California, May 2018: www.pathcme.com

Great Lakes Pathology Conference
Traverse City, Michigan, June 2018: www.pathcme.com

4th Annual Dr. Richard L. Kempson Diagnostic Pathology Course: Making Diagnoses That Matter: Timely Updates in Lung, Head & Neck, & Skin
Maui, Hawaii, July 2018: www.scientificsymposiums.com

Third Cancer Biomarker Conference (CBCIII)
Houston Methodist Research Institute Auditorium, September 2018: www.events.houstonmethodist.org

USCAP Interactive Learning Center
Palm Springs, California, September 2018: www.interactive.uscap.org

College of American Pathologists
Chicago, October 2018: www.cap.org

Arab Division of the International Academy of Pathology
The XXXII Congress of the International Academy of Pathology, King Hussein Bin Talal Convention Centre, Dead Sea, Jordan, October 2018: http://www.iap-congress.org/

California Society of Pathologists
San Francisco, California, December 2018: www.calpath.org/events

Any suggestions, news items, job postings, or other possible newsworthy bits are welcome and should be directed to one or both of the faculty editors (see below). Also, please contact us if you wish to be removed from the list or better yet, if you know of an alumnus who would like to be added to the list (with the appropriate contact info).

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