NC Society of Pathologists Digest

Society News

July 2025 - **MEGA** Edition

Annual Meeting Highlights

The NCSP annual meeting was an resounding success. Held in May at the Beaufort Hotel, the event brought together a remarkable lineup of speakers from every academic pathology department across the state and Dr. Scott Kilpatrick from the Cleveland Clinic, reflecting the strength and collaboration within our professional community.

The meeting also featured an exceptional poster session, showcasing innovative research. The energy and engagement throughout the event were a testament to the dedication and passion of our members. We extend our sincere thanks to all who participated and contributed to making this year's meeting a memorable and impactful experience.

Poster Session Winners: Mr. McKinney (Medical student); Dr. Maniaci and Dr. Katz

Future Leaders Scholarship Winner

We are proud to announce that Dr. Shuo (Sean) Niu, Pathology Chief Resident at Wake Forest University School of Medicine, was the winner of our first NCSP Future Leaders Scholarship! Dr. Niu attended the CAP Leadership Summit in Washington, DC on April 26-29 along with four NCSP member pathologists. Dr. Niu enjoyed this experience and is looking forward to learning more on how he can stay engaged with our NCSP and advocacy for our profession and patients. We hope to continue this scholarship next year, so trainees be on the lookout for this announcement later this year!

Longitudinal Lecture Series

The longitudinal learning series has been a huge success, with this academic year closing out strong with March's "Fellowship and Early Career Planning," lecture presented by Dr. Danielle Maracaja of UNC, and May's lecture, entitled "Medical Billing Basics" delivered by Andrew Harner with Medusind. With over 55 attendees, these lectures helped to demystify the complex and difficult process of career planning and the multifaceted world of medical billing.

This next academic year, we plan on transitioning from the initial bimonthly cycle to a quarterly schedule. Do you have a topic you are passionate about and would like to share with our state's trainees? Please reach out— amplify your voice and network with trainees through the Longitudinal Learning Series!

Mentorship Program

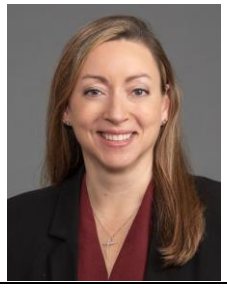
Last year, we began connecting NCSP pathologists in practice with residents at the four training programs in NC. Interested in becoming a mentor or mentee? Please let us know! One of our trainees wrote the following about their experience:

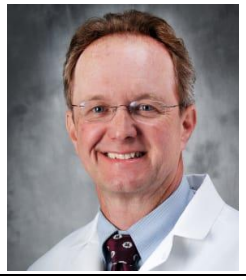
"Through the NCSP's Mentorship Program I have gained a trusted mentor who I have really enjoyed working with over the past year. My mentor has shared thoughtful career guidance, study tips, real-world experiences, and helped me navigate my personal and professional goals. It has been the highlight of my participation in the NCSP, and I am looking forward to continuing to build our relationship over the course of my career!"

Meet Your Society Officers

Besides putting a face to the name and title, we asked our officers these 3 questions:

1) If you could be any superhero, who would you be?
2) Would you rather have a rewind or pause button in your life?
3) If you could only eat one type of food for the rest of your life, what would it be?





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Wonder woman!	Spiderman	Dr. Strange	Black Widow	Superman
Rewind (aka- do over button!)	Pause	Pause	Rewind (do over button!!!)	Rewind
Empanadas	Chicken tikka masala	Sushi	Chocolate Chip Cookies	My wife's chicken and dumplings

NCSP Interesting Case Series

by Matthew Snyder, MD

Clinical History*:* Adolescent male with painful scrotal mass, extra-testicular and solid by ultrasound. Preoperative serum markers (LDH, AFP, beta-HCG) all within reference ranges.

Histology: Densely cellular nodules are surrounded by loose fibroconnective tissue. Variably sized tumor cells range from small stellate/round cells with scant cytoplasm to larger cells with vesicular chromatin, nucleoli, and some with eccentric nuclei displaced by whorls of eosinophilic cytoplasmic and cross striations. Geographic necrosis, apoptoses, and mitoses are readily identified. Tumor cells are positive for desmin (diffuse cytoplasmic), CD56, MyoD1, myogenin, and FLI-1 and are negative for CD99, WT1, NKX2.2, and synaptophysin. FISH negative for *EWSR1* rearrangement.

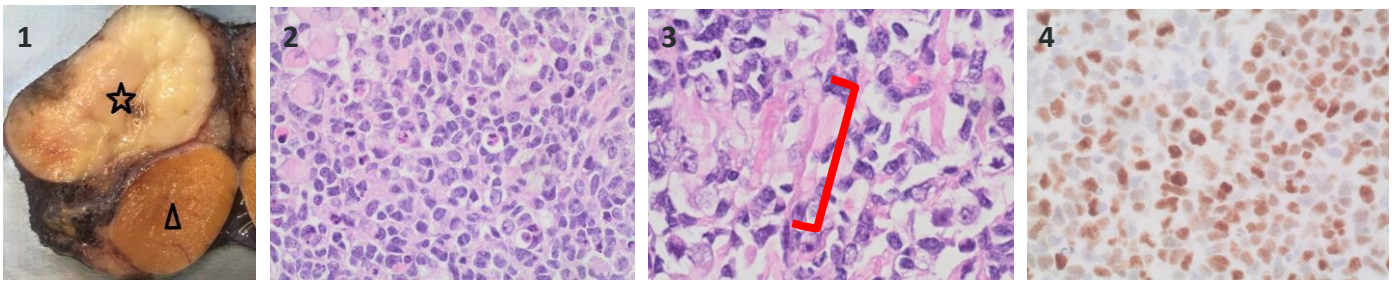

Figure 1: Pale fleshy tumor (star) not involving the testis (triangle). Figure 2: Smaller cells with scant cytoplasm intermixed with rhabdoid cells with whorls of eosinophilic cytoplasm. Figure 3: Rhabdomyoblasts with elongated cytoplasm and cross striations ("strap cells") (red bracket). Figure 4: MyoD1 IHC.

Case Diagnosis: Embryonal rhabdomyosarcoma

Histology/Key Diagnostic Criteria

- Conventional ERMS: Myogenic differentiation by morphology (rhabdomyoblasts) and/or immunohistochemistry (myogenin and MyoD1; both are sensitive and specific)
- Botryoid variant: polypoid, GU/GYN location, cambium layer morphology, good prognosis

High-Yield Relevant Information

- Embryonal subtype accounts for 60-75% of all RMS in children
- Most common paratesticular mesenchymal tumor in children
- Lack *FOXO1* fusion that is common in most alveolar RMS (through t(2;13)(q36;q14) or t(1;13)(q36;q14))
- Anaplasia (similar to Wilm's tumor) is significant prognostic factor; not identified in this case
- Modified staging system (IRSG) in pediatric cases (adult cases use TNM)

Differential Diagnosis with Pertinent Ancillary Testing

- Nephroblastoma (Wilm's tumor)
  - Negative for *EWSR1* rearrangement, pancytokeratin+, WT1+
- PNET/Extraskeletal Ewing's sarcoma
  - *EWSR1* rearranged (usually *EWSR1*::*FL1* fusion from t(11;22)(p24;q12), CD99+, NKX2.2+, FLI-1+ (small number of RMS can be FLI-1 positive)
- Neuroblastoma
  - Typically younger (0-5 years), arise along sympathetic nerve chain, MYCN overexpression (20-25% cases), synaptophysin/CD56+, Homer-Wright pseudorosettes
- Desmoplastic small round cell tumor
  - *EWSR1* rearranged (usually *EWSR1*::*WT1* fusion from t(11;22)(p13;q12)), desmin (dot-like), WT1+ (C terminus)
- Extrarenal rhabdoid tumor
  - Alterations in *SMARCB1* (loss of nuclear INI1 staining by IHC), pancytokeratin+, SALL4 +, desmin negative

NCSP Interesting Case Series

by Jordan Staggs Hunter, DO (PGY1-Wake Forest)

Clinical History: 10 y/o M with PMH of asthma and obesity who presents with 2 months of recurrent/worsening epistaxis. Imaging showed a large destructive enhancing sinonasal mass (6.6 cm) with intracranial and right orbital invasion.

Histology: Bland fibrovascular lesion composed of variable cellular fibrous stroma and intermixed variable vascular spaces. Fibrinous thrombi were noted. No mitotic activity or necrosis was seen. Beta catenin nuclear expression in stromal cells.

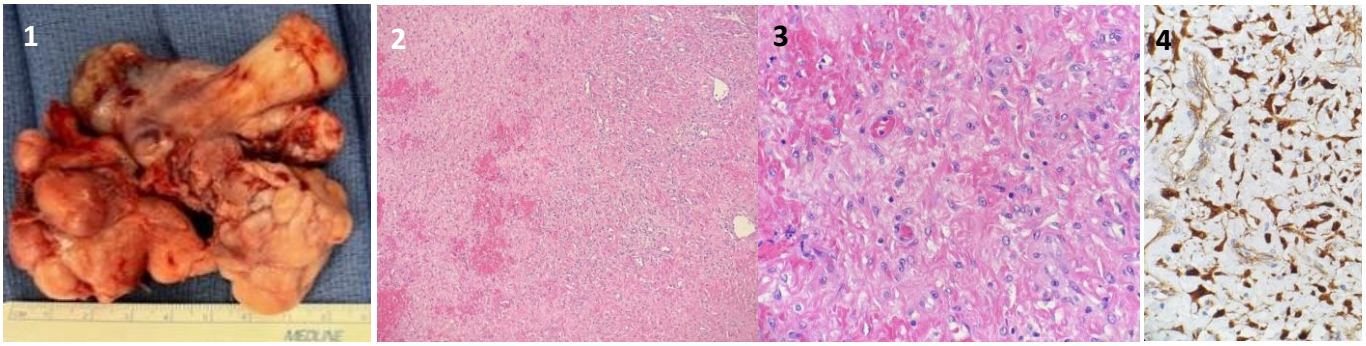

Figure 1: Poorly circumscribed, firm fibrotic mas. Figure 2 & 3: cellular fibrous stroma with intermixed vascular spaces Figure 4: Nuclear B-catenin IHC.

Case Diagnosis: Sinonasal tract angiofibroma (juvenile nasopharyngeal angiofibroma)

Histology/Key Diagnostic Criteria

- Benign fibrovascular lesion composed fibro-collagenous stroma and vascular space of various sizes.
- Mitotic figures usually absent.
- Immunohistochemistry: Positive- **beta-catenin (nuclear), SMA, CD31, CD34, ERG** and Negative- PR, CD117
- Somatic mutation of *CTNNB1* in 75% of cases.

High-Yield Relevant Information

- Rare, locally aggressive fibrovascular neoplasm of the nasopharynx found in adolescent and young male patients.
- Median age of 15 years old (range: 8-27 years of age)
- May show extension into the paranasal sinus, pterygopalatine fossa, infratemporal fossa and orbit (10-37% have intracranial extension)

Differential Diagnoses

Hemangioma:

- May affect both genders, any age and is not limited to nasopharynx
- Lacks cellular stroma enriched with fibroblasts and vessels are typically uniform in size, whereas angiofibroma usually contains central large caliber vessels and peripheral slit-like vascular space
- Negative Beta catenin nuclear or Androgen Receptor expression

Inflammatory sinonasal polyp:

- May contain fibrous to edematous stroma but usually hypocellular
- Lack rich vascularity seen in angiofibroma
- Negative Beta catenin nuclear or Androgen Receptor expression
- Occurs in nasal cavity or paranasal sinuses, rather than nasopharynx

Nasal turbinate:

- Normal nasal turbinate is vascular rich, containing large caliber blood vessels with muscle wall
- Lacks hypercellular stroma and slit-like vascularity of angiofibroma

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