Patient-Focused Diagnostics

EDUCATION

SAGIS BOARD REVIEW
SUMMER 2020

FREQUENTLY ASKED QUESTIONS

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SAGIS DIAGNOSTICS BOARD REVIEW MAY/JUNE 2020 FAQ SHEET

1. What are features which help discriminate a dermal duct tumor from a solid-cystic hidradenoma?

While both may have solid and cystic areas, the cells comprising the neoplastic aggregates in a poroid neoplasm (hidroacanthoma simplex, poroma, or dermal duct tumor) are more uniform and monotonous in appearance. Those comprising a solid cystic hidradenoma tend to have more ample cytoplasm with a tendency to accumulate glycogen intracellularly. That being said, both tumors belong to the acrospiroma family and show differentiation towards eccrine/apocrine ductal elements.

2. How would you differentiate a blue nevus from a deep penetrating nevus?

Clinically, DPN is usually a brown or bluish-back macule or papule that usually presents in children or young adults (but can occur at any age). Microscopically, it is characterized by the following attributes: symmetric silhouette of an inverted triangle (wedge-shaped), often extends into deep dermis/subcutis, plexiform growth pattern common, usually pigmented, range of cytologic features with variable proportions and shapes of spindle, ovoid, and epithelioid melanocytes, cytoplasm often contains fine melanin granules, focal nuclear atypia common (enlarged nuclei, hyperchromatisms, psuedoinclusions), mitoses are rare or absent, associated melanophages are common.

DPN can be clinically and histopathologically confused with blue nevus, in particular cellular blue nevus variants, as both may form bulbous and cellular expansile aggregates of melanocytes, may extend into the dermis and subcutis, and often display growth along neurovascular bundles. There are notable differences however. Clinically, blue nevi have a predilection for certain anatomic sites (scalp, dorsal foot or hand, buttock) but this is not the case for DPN. Many lesion of DPN are compound nevi—that is, they contain a junctional melanocytic component. In contrast, blue nevi are usually entirely intradermal. In cellular blue nevi, the cellular aggregates of melanocytes are admixed with dendritic melanocytes—a feature not seen in DPN. Finally, stromal sclerosis is a common feature of blue nevi but not DPN.

That being said, the distinction can sometimes be difficult; and, there are those in the field who feel that DPN is a type of combine nevus (banal and cellular blue).

3. How can one differentiate PMLE from pernio?

I think that differentiating between PMLE and perniosis on the basis of microscopic findings alone can be very difficult. Both may occur in acral locations, demonstrate papillary dermal edema, and are generally associated with a superficial and deep perivascular infiltrate of lymphocytes. It has been my experience that perniosis tends to have an infiltrate which is somewhat more dense around the eccrine coils than that seen in PMLE. In addition, one not infrequently sees "fluffy edema" in the wall of deep vessels (see Elston's text); and, in the setting of lupus chilblains, there is usually vacuolar change along the DE junction. Clinical history goes along way in distinguishing the two conditions. In the absence of such, I don't think you can be expected to distinguish the two. If both were answer choices on a multiple choice test (unless the answer was something entirely different), it would be a really bad question!

4. What characterizes "ancient change"?

This is a term that is used to describe cellular atypia (enlarged, hyperchromatic, and sometimes bizarre nuclei) in a variety of long-standing and chronically traumatized mesenchymal neoplasms such as Schwannomas and neurofibromas. Sometimes the vessels of such lesions show degenerative changes (fibrin, etc) as well. Generally, mitotic figures are difficult to identify in these lesions despite the presence of nuclear pleomorphism and hyperchromasia.

5. How can one distinguish acroangiodermatitis from Kaposi's sarcoma?

While the two do have some clinical and histologic similarities, the papules and nodules of acroangiodermatitis are characterized by a proliferation of small dilated vessels in an edematous demis. The vessels are more uniform and regular than those seen in KS and lack the "promontory sign" and jagged outline so characteristic of patch stage Kaposi's. The dermis is KS is characterized by more fibrosis, and of course the endothelial cells are HHV-8 positive.

6. For slide 11, what is the immunohistochemical profile listed in choice E (SMA, cytokeratin, CD31, Sox-10, CD10) used to differentiate?

SMA, cytokeratin, CD31, Sox-10, and CD10 would be a good initial panel to use on a poorly differentiated malignant neoplasm present within the dermis, especially one that closely approximates the undersurface of the epidermis. The panel would help rule in (or rule out) a leiomyosarcoma, a poorly differentiated squamous cell carcinoma, an angiosarcoma (I personally prefer ERG over CD31 or CD34 as a vascular marker), and an atypical fibroxanthoma.

7. For slide 35, what immunohistochemical stains would be useful for a "pagetoid lesion"?

The key items in the pagetoid differential are: Paget's/extramammary Paget's (generally positive for CK7, EMA, and CEA), melanoma (Mart-1/Melan-A, S100, and SOX-10 positive) and pagetoid Bowen's disease which is cytokeratin positive, sometimes expresses EMA in the pagetoid cells BUT, most importantly, is CK7 negative and negative for melanocytic markers.

8. Is calcification a feature of desmoplastic trichoepithelioma?

Yes, calcification is frequently seen within the stroma of a desmoplastic trichoepithelioma. I think it is frequently a response to rupture of a horn cyst; and, given the fact that they are fairly numerous in DTE, calcification is also common. Such foci are not specific, however, as you can imagine. It is not unusual to see foci of calcification in MAC or even BCC . . . but generally not to the degree one sees the change in a trichoepithelioma.

9. What distinguishes cryptococcosis from blastomycosis?

Sometimes morphology can be difficult to assess in H&E stained sections; and, of course, we are looking at a three dimensional orgainism in one plane. That being said, crypto is much more variable in size and shape that blasto; and, if you look at the sections again, not the tendency of some of the organisms to cluster in fairly large clear spaces. Blasto of course has no gelatinous capsule, is not a variable in shape, and is better at "social distancing"!

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