COGNITIVE Oral Styled Question #1:

Plantar fibromatosis for 6 year duration. Pain to medial arch and patient is on hypothyroid medication. Know skin incision placement and direction, what structures to remove, recurrence rate, and to be NWB during post-op. Know histology of the lesion. Know the anatomy and possible nerves and tendons that might be involved if shown an intraoperative photograph.

Review:

Fibromatosis is a group of non-neoplastic infiltrative growths that tend to recur after attempts at excision. It is classified in the following manner.

a. DIGITAL FIBROMATOSIS (infantile dermal fibromatosis) was first described by Sakurane in 1924.

b. PLANTAR FIBROMATOSIS was initially described by Dupuytren in 1832 and later by Ledderhose in 1897.

c. APONEUROTIC FIBROMATOSIS (juvenile aponeurotic fibroma, calcifying fibroma of Keasbey) was initially described as a rare condition in children, by Keasbey, in 1953.

Cases of digital fibromatosis occur most frequently in infants and young children, so that the child will be brought in by worried parents who have noticed a small hard lump on a toe. Alternatively, the patient may become aware of "lumps" in the sole of the foot, often in a non-weightbearing area. Older patients may also develop concurrent Peyronie's disease (penile fibromatosis) and classical Dupuytren's palmar fibromatosis, as well as arthritic symptoms.

Digital fibromatosis usually manifests as small subcutaneous nodules on the extensor surfaces of the digits, that are fixed to the skin and/or underlying tissues. Plantar fibromatosis often demonstrates firm, multinodular and irregular nodules in the medial aspect of the plantar aponeurosis. In some cases, both feet are affected. Aponeurotic fibromatosis may show very firm lesions in the palms and soles of youngsters.

In all cases, a careful history should be elicited and other areas affected should be noted. Careful histopathologic examination must be performed, to rule out sarcomas. In the case of aponeurotic fibromatosis, histopathologic examination to reveal intralesional areas of ossification and chondrification

Surgical excision must be more extensive than the apparent borders of the lesion, since the nodules are infiltrative, and missed areas are sites for recurrences. All edges must be reported clear of the lesion, to prevent additional surgery. With this in mind, digital fibromatosis may require amputation. Incisional biopsies are deceptive, and may give the impression of sarcoma.

Approach a plantar fibromatosis from the medial, central or lateral aspect of the arch with a curvilinear incision over the lesion(s) to reduce the potential for scarification. Incorporate the concepts of the "Z" incision or anti-tension lines, rather than relaxed skin tension lines (RSTL) or Langer's lines. Be aware the apices of the "Z" are prone to vascular embarrassment. A tourniquet may or may not be needed.

Dissect down to the fascia and do not strip the skin from the subcutaneous tissue as this may cause a skin slough. Recognize the fact that the lesion may be adherent to the skin and multiple lesions may be present. Once down to the fascia, dissect proximal and distal to the mass, as well as medial and lateral. Upon visual and manual palpation and identification, severe the plantar fascia (medial, central or lateral band) carefully without cutting the underlying muscle belly.

Avoid the medial plantar nerve and artery branches in the area. Grasp the proximal margin of the fascia with a hemostat and carefully pull the fascia distally toward the toes. Again, do not tear the muscle belly septa and do not leave any red muscle fibers attached to the glistening white fascia. Bleeding will not only increase pain but may also promote hematoma formation and excessive edema and ecchymosis.

Once entirely stripped, severe the fascia distally and send the specimen to pathology for microscopic identification. Secure hemostasis and do not attempt to suture the fascial defect together. Rather, simply sew the subcutaneous layer and skin layers together. Use a drain if needed. A cast is not necessary but most patients can not walk on the foot for 2-4 weeks because of discomfort. Progress to a sneaker, as tolerated and fabricate an orthotic device to compensate for the disrupted windlass mechanism of Hicks.

GOOD LUCK!
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