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Images in Surgical Infection

Spermatic Cord Abscess after Coronary Angiography via Femoral Artery mimicking Incarcerated Inguinal Hernia

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EMERGENCY PRESENTATION of a groin lump has many possible causes. Spermatic cord abscess is an extremely rare condition with only two cases published. Both published cases of spermatic cord abscess were an extension from the primary intra-abdominal pathologic process [1,2]. We report the first case of external inoculation of the bacteria (*Staphylococcus aureus*) into the spermatic cord during coronary angiography via femoral artery. The patient presented as incarcerated inguinal hernia.

A 70-y-old man presented to the emergency department with a 5-d history of painful mass in the right groin. During that period the mass increased in size with increasing pain. The patient was afebrile without vomiting or abdominal pain, with regular daily passage of stool and flatus. The mass was tender, irreducible, 3 cm in diameter, and did not increase with Valsalva maneuver. The mass was not pulsatile. Overlying skin was normal without signs of previous puncture or hematoma (Fig. 1) and pseudo-oaneurysm was excluded clinically. The scrotal skin and testicles were normal without signs of tumor or infection. The patient had undergone a coronary angiography through the right femoral artery 1 mo ago due to angina pectoris. There was no history of groin hernia. There was no other infective process in the body present. Plain abdominal radiograph was unremarkable.

The conclusion was that the primary pathology was localized in the groin and emergency operation due to incarcerated inguinal hernia was indicated. During the operation, an irreducible mass in the spermatic cord was found. After division of the cremaster muscle, an oval encapsulated mass 4×2 cm was found without elements of the groin hernia (Fig. 2). The abscess with the complete capsule mimicking indirect inguinal hernia was removed (Fig. 3). Because dense white-yellowish pus was present, empiric antibiotic therapy against *Staphylococcus aureus* with cloxacillin 4×1 g and garamycin 2×120 mg was administered. The wound was left open with daily cleansing with skin sutures placed on the third post-operative day. Cultures confirmed *S. aureus* sensitive to cloxacillin that was continued for 5 d postoperatively. During hospitalization the patient was afebrile. After 3 mo the patient was symptomless.

The differential diagnosis of groin mass includes variety of conditions that could be divided into primary groin conditions and distant primary pathologic processes extending into the groin. The most common primary spermatic cord pathology includes tumors—rare primary tumors of the spermatic cord [3] or metastatic tumors to the cord [4]. Tumors often manifest as a painless, slow growing masses in the groin. Features suggestive of malignancy include rapid growth, large size, and symptomatic presentation. Another group are infections presenting as tender masses with other symptoms and signs of infection. Infective process can be inoculated, extension from the surrounding infection or hematogenous. The third group consists of spermatic cord hematomas that may be idiopathic, traumatic, secondary to anticoagulation therapy, or as an extension of a retroperitoneal hemorrhage [5].

While common inguinoscrotal swellings (hernias and hydrocoeles) can be diagnosed on clinical examination, all the atypical swellings should be further investigated before surgical exploration. In our case there was no fever or signs of inflammation on the overlying skin. This is due to the small size of the abscess and its location in the deeper structures where only tender mass was present. Ultrasonography is the modality of choice to detect and evaluate spermatic cord

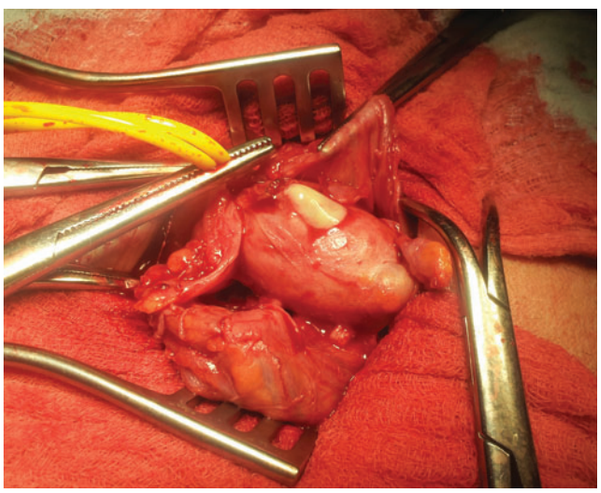

FIG. 1. The encapsulated dense yellowish pus 4×2 cm was found in the spermatic cord. Microbiology showed *Staphylococcus aureus*.

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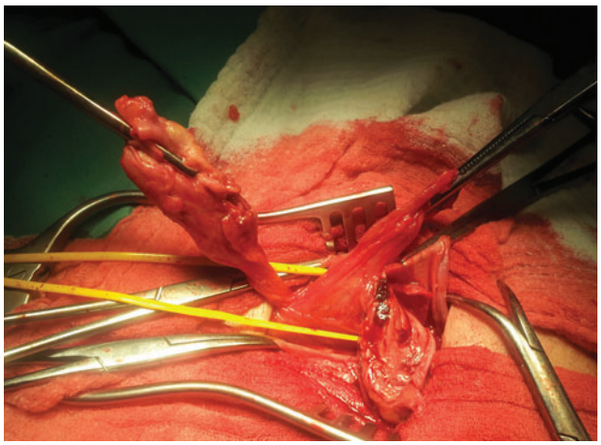

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FIG. 2. Encapsulated pus was divided from other structures of the spermatic cord and there were no signs of indirect or direct inguinal hernia.

pathology. Computed tomography is important for defining benign or malignant potential of the spermatic cord tumors, equivocal ultrasound findings, or primary pathology extending to the groin. Radiologic suspicion of malignant tumor directs the surgeon to perform a wide local excision, thus avoiding the need for further re-excisions and reducing the risk of disease recurrence.

Emergent presentations of groin mass rarely require conservative therapy. Most presentations are incarcerated inguinal hernias, necrotic enlarged lymph nodes with or without abscess, an abscesses from other localizations draining into inguinal region, infected hematomas, (pseudo)aneurysms, or even sebaceous cysts (inflamed and non-inflamed). The sebaceous cyst mostly grows slowly but if the inflammation is present it can enlarge significantly over the hours or days. Ultrasonography reveals the underlying cause in most cases and could be easily performed in emergency settings. It is important to define whether the pathology in the groin is secondary because the underlying cause should be treated at the same time if possible. Infection extending to the inguinal canal (but not the spermatic cord itself) includes extension of the infection from the retroperitoneum, intraperitoneal infection or scrotal infection, such as scrotal pyocoele extending to inguinal canal [6]. Infection to the inguinal region can extend even from the infected partial/total hip replacement. A PubMed search found only two cases of true spermatic cord abscesses. One case was mycotic spermatic cord abscess in a continuous ambulatory peritoneal dialysis patient [1] and another was spermatic cord abscess with concurrent prostatic abscess involving the seminal vesicle [2]. Both cases were extension (or possible hematogenous spread) of the primary suppurative process inside the body. We presented the first case and photographs of spermatic cord abscess after femoral artery coronarography due to bacterial inoculation (no other infective process in the body was detected) from the skin presented in emergent setting. It is not known how many ''sticks'' were required and whether they were made using ultrasound. High index of clinical suspicion (previous trauma, infection, injections and minimally invasive access procedures) and imaging modalities are necessary for the preoperative diagnosis of the extremely rare spermatic cord abscess.

Author Disclosure Statement

No competing financial interests exist.

References

1. Ishida K, Yuhara K, Kanimoto Y, Numano M. A case of mycotic spermatic cord abscess in a continuous ambulatory peritoneal dialysis patient [in Japanese]. Hinyokika Kiyo 2005;51:37–39.
2. Machida H, Ueno E, Nakazawa H, et al. Spermatic cord abscess with concurrent prostatic abscess involving the seminal vesicle. Radiat Med 2008;26:81–83.
3. Tan CJ, Dasari BV, Smyth J, Brown RJ. Liposarcoma of the spermatic cord: A report of two cases. Ann R Coll Surg Engl 2012:94:e10–12.
4. Mohammadi A, Makhdoomi K, Ghasemi-rad M. Metachronous metastasis to the spermatic cord from renal cell carcinoma presenting as a high scrotal mass: A case report. Cancer Imaging 2011;11:163–165.
5. McKenney MG, Fietsam R Jr, Glover JL, Villalba M. Spermatic cord hematoma: case report and literature review. Am Surg 1996;62:768–769.

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