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Eosinophilic funiculitis initially diagnosed as irreducible inguinal hernia: A case report

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ABSTRACT

BACKGROUND: Most groin masses are first suspected to be groin hernias. More than 80% of bulging groin lesions are reportedly diagnosed as hernias by ultrasonography. Establishment of the correct diagnosis of hernia among all differential diagnoses is not easy. We herein describe a very rare case of groin eosinophilic funiculitis that presented as an irreducible groin hernia.

CASE PRESENTATION: A 59-year-old man presented to our hospital with suspicion of a right groin hernia. He had a 1-week history of a painful right groin tumor. The tumor was about 4 cm without skin redness or warmth, irreducible even in the supine position, and associated with mild tenderness. Enhanced computed tomography showed that the mass seemed to be connected to the intra-abdominal structures. With time, the patient's pain did not increase, the inflammatory response did not worsen, and no ischemic signs were observed by enhanced computed tomography. Therefore, we diagnosed the tumor as an irreducible but not incarcerated hernia and performed elective surgery. Intraoperative examination revealed no hernia sac, and a 4- × 3-cm tumor was observed around the spermatic cord. A malignant tumor was not completely ruled out. High orchiectomy was performed after consultation with the urologists. Pathological examination of the tumor showed no malignant features, and the final diagnosis was eosinophilic funiculitis with massive inflammatory changes and eosinophil invasion.

CONCLUSION: Eosinophilic funiculitis is very rare; only three cases have been reported to date. We should always consider unusual causes of groin masses during a surgical approach to hernia-like lesions.

1. Introduction

One of the most common diagnoses for groin bulging is a groin hernia, which is reportedly present in 84% of such cases as shown by ultrasonography [1]. Other differential diagnoses, although uncommon, are inflammatory lesions and malignant neoplasms [2–4].

Well-known inflammatory diseases associated with local eosinophilic infiltration are eosinophilic pneumonia, eosinophilic digestive disease, and eosinophilic chronic rhinosinusitis [5–7].

We herein report a very rare case of eosinophilic funiculitis that was preoperatively diagnosed as an irreducible groin hernia, illustrating how surgeons or clinicians may mistake when the cause of an inguinal mass is one of these less common etiologies. This report is based on Surgical Case Report (SCARE) Guidelines [8].

2. Presentation of case

A 59-years-old man was referred to our hospital for evaluation of right groin bulging. His height and weight were 159.0 cm and 66.2 kg respectively. His medical history included hypertension, hyperlipidemia, hyperuricemia, and dermal pruritus, and his child had atopic dermatitis. He felt upper abdominal pain and nausea and

Abbreviations: CT, computed tomography; IgE, immunoglobulin E; ANCA, anti-neutrophilic cytoplasmic antibody.

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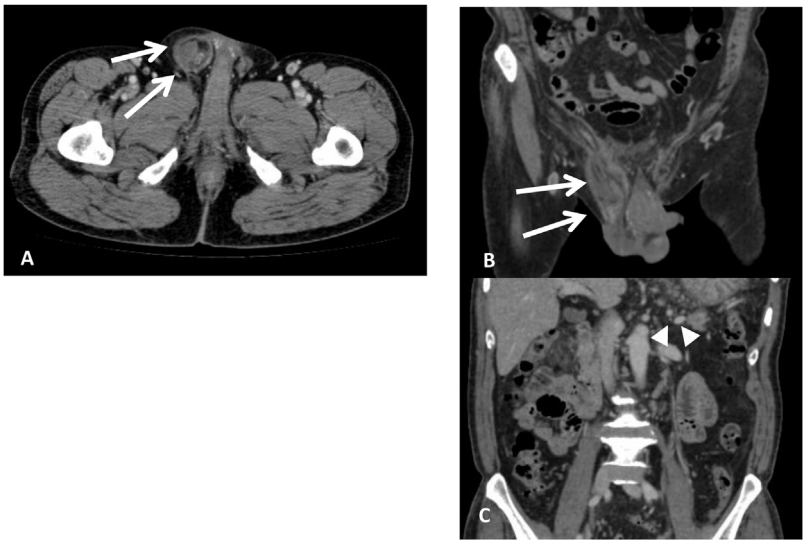

Fig. 1. Abdominal enhanced CT. The right groin mass (arrow) was connected from the abdominal cavity to scrotum which suggested right groin hernia (A; sagittal section, B; coronal section). The fatty tissue around the stomach was enhanced and lymphadenopathy (arrow head) around the stomach, para aorta and mesentery was shown (C).

had noticed the right groin mass with mild pain after heavy drinking 1 week previously. He was diagnosed with acute pancreatitis and medicated. The groin mass did not change in size, so he was referred to our hospital with suspicion of an irreducible inguinal hernia. The patient was afebrile. His abdomen was not distended and was soft with no tenderness. The right groin mass was about 4 cm without redness of the skin. It was elastic hard and mildly tender, had no localized warmth, and was manually irreducible.

In the laboratory data, lactate dehydrogenase (317 IU/L; normal range, 119–229 IU/L), C-reactive protein (1.0 mg/dL; normal range, 0.0–0.5 mg/dL), creatine kinase (372 IU/L; normal range, 62–287 IU/L), and the erythrocyte sedimentation rate (45 mm/h; normal range, 2–10 mm/h) were slightly elevated. All other blood parameters, including the white blood cell, neutrophil and eosinophil counts were within normal limits.

Abdominal enhanced CT showed that the right groin mass seemed to be connected from the abdominal cavity to the scrotum, suggesting a groin hernia (Fig. 1). The hernial contents were considered to be fatty tissue with no sign of ischemic change or strangulation, but CT showed inflammatory change in the inguinal canal, so we consult to the urologists for suspicious of testicular torsion, then it was negative by ultrasonography of testis. Lymphadenopathy around the stomach, para-aortic tissue and mesentery was also observed. The patient had undergone examination using a gastrointestinal camera with his family doctor, and no gastric cancer was observed at that time. Based on these findings, we diagnosed the patient with an irreducible but not incarcerated right groin hernia and performed elective surgery.

The operation was begun with anterior approach. After dissecting the inguinal canal, the hernia sac could not be found. An approximately 4-cm elastic hard tumor surrounded and tightly adhered to the spermatic cord (Fig. 2). After consultation with the urologists, a malignancy was strongly suspected. Preoperatively, we had provided an insufficient explanation to the patient and his family that the groin tumor might be a malignancy, and we did not obtain informed consent from them for an additional operative procedure involving resection of the spermatic cord and testis. Therefore, during the operation, we fully explained to his family that there was a strong possibility of a malignancy and the need for tumor resection including the spermatic cord, testicular vessels, and testis. After obtaining informed consent from the patient's family, we performed high orchiectomy.

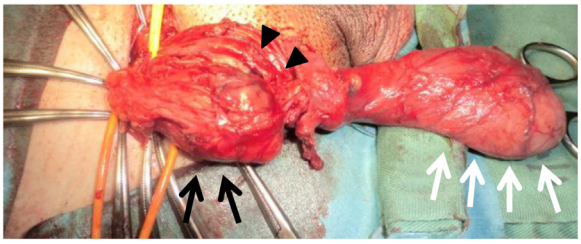

Fig. 2. Intraoperative findings. There was 4 cm elastic hard tumor (arrow) surrounding the spermatic cord (arrow head) and it adhered tightly, therefore the high orchiectomy was performed (testis; white arrow).

In macroscopic findings, a 4- × 3-cm tumor was located at the proximal of the spermatic cord. The cut surface was white and solid (Fig. 3).

In microscopic findings, edematous, degenerative, and severe inflammatory change with infiltration of red blood cells and eosinophils was observed in the tumor (Fig. 4). Eosinophilic infiltration and thick, fibrous change was also observed at the sheath of the spermatic cord, close to the tumor. No abnormal findings were observed in the seminal duct, artery, vein of the ductus deferens or testis. Vasculitis was not present. Immunostaining for T and B cells revealed no lymphoma or plasmacytoma. The final histopathological diagnosis was eosinophilic funiculitis.

The patient's postoperative course was uneventful, and he was discharged from the hospital twelve days postoperatively. Five days after the operation, the testicular tumor markers such as alpha-fetoprotein and human chorionic gonadotropin were not elevated respectively (3.3 ng/ml; normal range 0.0–9.99 ng/ml, ≦1.0 mIU/ml; normal range 0.0–2.7 mIU/ml). Three days after the operation, the eosinophil count increased to 1462/μL. Twenty-seven days postoperatively, lactate dehydrogenase were still slightly elevated (237 IU/L), the eosinophil count decreased to the normal range and the immunoglobulin E (IgE) level increased to 4610 IU/mL (normal range, ≤173 IU/mL). The levels of other immunoglobulins, anti-nuclear antibody, perinuclear ANCA, cytoplasmic ANCA, rheumatoid factor and other self-directed antibodies were within normal limits. Thirty-two days postoperatively, 18-F-fluorodeoxyglucose positron emission tomography/CT showed that the enlarged intraabdominal lymph nodes that had been seen on preoperative CT were smaller, and no 18-F-