Amyand’s hernia in a neonate: A case report

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Acute appendicitis secondary to hernia incarceration presenting as scrotal swelling is exceptionally rare in neonates. We report a neonate who presented with tender swelling in the right scrotum. Ultrasonography detected features of a rare Amyand’s hernia. Surgical exploration and histopathological examination confirmed the diagnosis.

Key words: Amyand’s hernia, appendicitis, neonate, scrotal swelling, ultrasonography


INTRODUCTION

Amyand’s hernia is a rare presentation of acute appendicitis, in which an incarcerated or perforated appendix is found in the right inguinal canal.[1] The incidence ranges from 0.07% to 0.13% of all cases of appendicitis.[2] Pain in the inguinal region or in the flank is the most common presentation.[3] It is seldom diagnosed preoperatively due to its unusual and infrequent clinical presentation.[4] Only a few cases have been diagnosed either by computed tomography (CT) or ultrasonography[5] before operation. We report a 24-day-old neonate who presented atypically with tender swelling in the right scrotum. Ultrasonography findings suggested Amyand’s hernia preoperatively, which was confirmed by histopathological examination following surgery.

CASE REPORT

A 24-day-old male neonate presented at the Department of Pediatric Surgery of The First Hospital of Jilin University in Changchun, China with right scrotal swelling for 4 days. There was no history of fever, vomiting, abdominal distension, or diarrhea. Local examination revealed a firm, tender swelling of 3.0 × 2.0 × 2.0 cm in the right inguinal region extending into the scrotum. The skin over the swelling was red and there was no fluctuation. The left scrotum and testis were normal. The neonate’s total leukocyte count was increased (11.9 × 10⁹/L). Ultrasonography detected a colon-type echo in the right inguinal canal [Figure 1] measuring 30.0 × 5.0 mm. The wall of the colon-type structure measured 3.5 mm in diameter and was thickened. There were moving hyperechoes in the lumen. The right testis measured 9.9 × 5.2 mm with an anechoic region of 7.0 × 12.0 mm anterior to the right testis [Figure 2]. The left testis was 8.3 × 4.1 mm without any abnormalities. An ultrasonic diagnosis of right inguinal hernia and right encapsulated hydrocele of the tunica vaginalis was considered.

Since the patient’s presentation was not typical of a hernia, a primary clinical diagnosis of testicular tumor or epididymitis was considered. Because the neonate was considered to have epididymitis, he was started on antibiotics for 2 days. The tenderness subsided, but the right testicular swelling reduced minimally. Repeat ultrasonography showed similar features as before, including right inguinal hernia and encysted hydrocele in the right scrotum.

The neonate underwent surgical exploration after the second ultrasonic examination. Surgical exploration revealed swollen tunica vaginalis of the right testis. In addition, the tunica vaginalis, right testis and epididymis were found to be hyperemic and swollen with discharge of purulent material. The tunica vaginalis also contained a colon-type structure adhering to the swollen and inflamed right testis and epididymis. This colon-type structure extended into the right inguinal region and was identified as the appendix. An appendectomy was performed through the inguinal incision alone, and the right hernia sac was ligated.

Histopathological examination of the appendix specimen revealed fibrous tissue hyperplasia in the interstitium, with acute and chronic inflammatory cell
infiltration, vasodilatation, and congestion. This confirmed
the diagnosis of appendicitis. The post-operative period was
uneventful. An ultrasonography scan 1 week later revealed
a normal scrotum and testes on both sides, and the patient
was discharged from the hospital.

DISCUSSION

Amyand’s hernia presenting as scrotal swelling without
any other symptoms is extremely rare. There have been
fewer than 200 cases of Amyand’s hernia in the literature;
however, only two cases have presented as scrotal
swelling.[6,7] Most cases of Amyand’s appendicitis occur
in the inguinal canal or abdominal wall. Although acute
scrotum is a common clinical presentation of torsion
of the testis or its appendages and epididymo-orchitis,
icarcerated hernia and scrotal and/or inguinal abscess
should also be considered in the differential diagnosis.
Clinical presentations of torsion caused by undescended
testes may be quite similar to those observed in Amyand’s
hernia.[8] Ultrasonography is useful in distinguishing
torsion of undescended testes from Amyand’s hernia
because of its high efficiency, low exposure, and real-time
properties.

Ultrasonography exhibits several advantages in
differentiating Amyand’s hernia and other acute scrotum
conditions. First, ultrasonography can characterize
hernias and differentiate hernias from other structures.
Ultrasonography can detect hernias with sacculations and
moving content of the colon. In this case, ultrasonography
detected a soft tissue structure similar to a thick wall of
the colon without sacculations, and the hernia contained an
isolated soft tissue with a thick wall and moving contents
in the inguinal canal. Additionally, the cecum was superior
to the testes. Second, ultrasonography, due to its real-time
monitoring, can identify the moving content in the intestine.
Third, ultrasonography can recognize normal testes and
epididymides. Testicular tumors and epididymitis can be
reasonably excluded even though these conditions have
similar symptoms. In the present case, ultrasonography
identified an inflamed appendix and encapsulated fluid
around the right testis that was confirmed by surgery as
transudate due to appendicitis.

In this case, a neonate presented with right scrotal
swelling without any signs of peritonitis. This was most
likely because inflammatory transudate surrounded
only the testis, and thus irritated the testis and its
surrounding tissues. Since the appendix, rather than the
colon, was incarcerated in the inguinal canal, symptoms
of intestinal rhythm alteration were not present.
Therefore, the patient presentation was misleading.
Ultrasonography helped diagnose the condition more
accurately. Specifically, ultrasonography revealed the
presence of an echogenic intestinal canal in the right
inguinal canal and encapsulated hydrocele of the tunica
vaginalis. In conclusion, we would like to highlight
that ultrasonography might be a valuable tool in the
preoperative diagnosis of Amyand’s hernia.

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