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**Case Report**

# A rare case of Amyand hernia with acute appendicitis in a 7-day-old child

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## ABSTRACT

Amyand hernia is an extremely rare type of inguinal hernia where the vermiform appendix resides within the hernial sac. We presented a case of a 7-day-old male patient who presented to the ER with an irreducible right congenital inguinal hernia for 6 hours. The patient underwent surgical correction for the hernia where a thick, elongated, and inflamed appendix was identified within the hernia sac, ligated and excised to be sent for histopathological evaluation. Amyand hernia, as well as acute appendicitis in neonates, is an extremely rare condition, and in most cases, the diagnosis is established intraoperative because it's nearly impossible to be diagnosed by radiological imaging.

**Keywords:** Amyand, Hernia, Congenital, Appendicitis

## INTRODUCTION

Amyand hernia is considered a very rare form of inguinal hernia accounting for nearly 1% of all inguinal hernia cases; however, the presence of an inflamed vermiform appendix in an Amyand hernia accounts for approximately 0.1%.[1] the rarity of this presentation might be referred to various factors; first of all lack of definitive radiological assessment for such cases, the inability to take a proper history, and the resemblance of presenting symptoms with much more common pathologies like strangulated congenital hernias as inguinoscrotal swellings and necrotizing enterocolitis as neonatal sepsis with gastrointestinal symptoms.[2,3]

## CASE REPORT

A 7-day-old male presented to the ER with right inguinoscrotal swelling for 6 hours. The patient had some symptoms over the previous couple of hours including low-grade fever and unstoppable crying.

The child was resuscitated first and then an urgent ultrasound study was ordered which showed an irreducible right inguinoscrotal hernia with diminished vascularity, alongside a plain erect X-ray study which showed just distended bowel loops.

Plain erect X-ray scan revealing distended bowel loops (Figure 1). The blood tests came back with an impressive increase in the white blood cells number (22.300/ml) which urged us to go on surgery to reduce the hernia, upon identifying the hernia content the inflamed vermiform appendix was identified, ligated, and excised the herniotomy was completed, the postoperative period was uneventful as the patient only received antibiotics and was discharged home well. A thick, elongated vermiform appendix is identified. The subsequent visits to the outpatient clinic were fine and the patient was fit and well.

**Figure 1: Plain erect X-ray scan.**

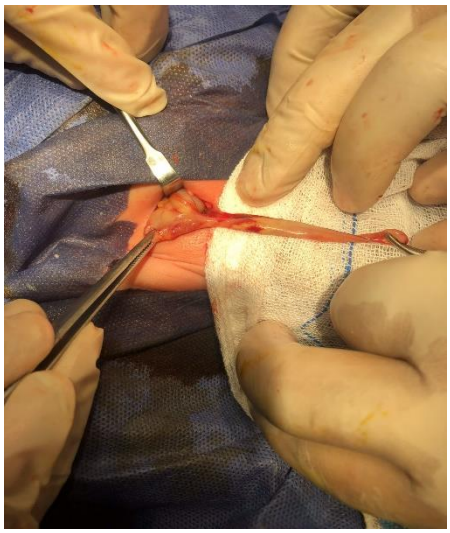

**Figure 2: Intra-operative findings.**

## DISCUSSION

There's evidence of cases in the medical literature about the presence of the vermiform appendix within the inguinal hernial sac since 1735.[1] The condition was named after the French surgeon Claudius Amyand who described the presence of a perforated appendix within an inguinal hernia in a child and later on became the first surgeon ever to perform an appendectomy. Establishing the diagnosis preoperatively is very hard especially in neonates as the different presentations of these cases can mimic more common pathologies within this population, for example, inguinoscrotal swellings can be detected frequently and diagnosed as strangulated congenital inguinal hernias while fever, lethargy, abdominal pain, abdominal distension, vomiting, and even acute abdomen can raise the suspension of necrotizing enterocolitis (NEC) more than appendicitis.[3] The exact mechanism behind inflammation of the appendix in Amyand hernia is not completely identified but the most common theory trying to explain the condition is ischemic changes due to compression of the content by the hernia ring.[5]

Losanoff and Basson's classification (Table 1) is widely considered in the surgical community as a model to follow on how to deal with Amyand hernia.[4] It divides the Amyand hernia into four types; type 1: a non-inflamed appendix situated in an inguinal hernia; type 2: an inflamed appendix without peritoneal sepsis; type 3: a perforated appendix with an abdominal wall or peritoneal sepsis; and type 4: a perforated appendix with intra-abdominal pathology.

**Table 1: Losanoff and Basson's classification of Amyand hernia.[4]**

| Classification | Description | Surgical management |
|---|---|---|
| **Type 1** | Normal appendix in an inguinal hernia | Hernia reduction, mesh repair |
| **Type 2** | Acute appendicitis in an inguinal hernia, without abdominal sepsis | Appendectomy, primary repair of hernia without mesh |
| **Type 3** | Acute appendicitis in an inguinal hernia, with abdominal wall or peritoneal sepsis | Laparotomy, appendectomy, primary repair without mesh |
| **Type 4** | Acute appendicitis in an inguinal hernia, with abdominal pathology | Manage as type 1-3, investigate pathology as needed |

Radiological evaluation via ultrasound can help regarding the diagnosis of the condition but in most cases, the definitive diagnosis is made during the surgery.

## CONCLUSION

Amyand hernia is an extremely rare type of inguinal hernia where the vermiform appendix resides within the hernial sac. The hernia itself should be corrected at once regardless of the degree of inflammation to the vermiform appendix. However, the excision of the appendix depends on whether it is inflamed or not. Amyand hernia, as well as acute appendicitis in neonates, is an extremely rare condition, and in most cases, the diagnosis is established during surgery because it's nearly impossible to be diagnosed by radiological imaging.

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