

## CASE REPORT

# Co-existent Classical Maydl's and Amyand's Hernias: A Rare Case Report

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### ABSTRACT

**Aim:** The aim of this case report is to highlight the advantages of laparoscopy in the management of incarcerated, obstructed, and strangulated hernia.

**Background:** Inguinal hernias account for three-quarters of all abdominal wall hernias. They may present as emergencies and require quick and accurate diagnosis followed by prompt management in order to prevent undesirable consequences. The surgeon has to select the appropriate treatment approach from limited options. In this case report we are aiming to solidify the laparoscopy as an additional weapon in the surgeon's armamentarium.

**Case description:** This is a case of an unusual type of obstructed indirect inguinal hernia with impending strangulation. Diagnostic laparoscopy findings revealed a Maydl's hernia and an adherent inflamed appendix in a long-standing congenital inguinal indirect hernia. In addition to this, extensive small bowel adhesions were also seen.

**Conclusion:** This case highlights the superiority of laparoscopy compared to clinical/image judgment in incarcerated, obstructed, or strangulated hernia.

**Keywords:** Amyand, Case report, Inguinal hernia, Laparoscopy, Maydl.

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### BACKGROUND

The overall incidence of abdominal wall hernia is approximately 1.7%, but the incidence generally increases up to 4% after the age of 45 years and three-quarters of these hernias are inguinal, which are more common in men than women.<sup>1</sup> Congenital type inguinal hernia is also prevalent, being diagnosed in childhood or later in adult life. Inguinal hernia repair is one of the most commonly performed surgical procedures. Some conditions like smoking, chronic obstructive pulmonary disease (COPD), prolonged heavy weight lifting, positive family history, appendectomy, and peritoneal dialysis may predispose to its development.<sup>2</sup> The inguinal hernia may present as an intermittent/persistent painless lump, or a painful lump in case of obstruction/strangulation. Clinical diagnosis eliminates the need for additional diagnostic work up and imaging studies.<sup>3</sup> Treatment is usually surgical if symptomatic. Various surgical therapeutic procedures are performed around the world with varying degrees of success. However, the treatment of hernia was revolutionized by the introduction of synthetic mesh and later by the utilization of the laparoscopic approach. There are some unique inguinal hernias that present diagnostic and management challenges, such as Maydl's and Amyand's hernias. They are rare and mostly diagnosed during operation. Knowledge of such variations is mandatory as they require special operative management strategy. We present a rare case of coexisting Maydl's and Amyand's hernias presenting as an obstructed inguinal hernia. To the best of our knowledge, this is the first such case to be reported.

### CASE DESCRIPTION

A 65-year-old male with no previous surgical history was admitted through the emergency room with a 4-day history of painful, irreducible swelling of his right groin. He has had self-remitting

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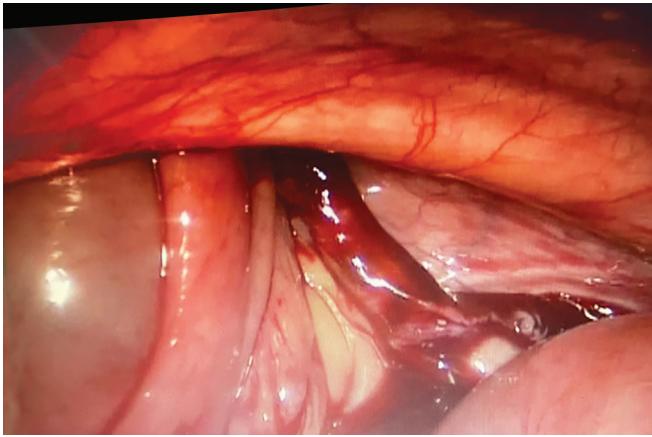
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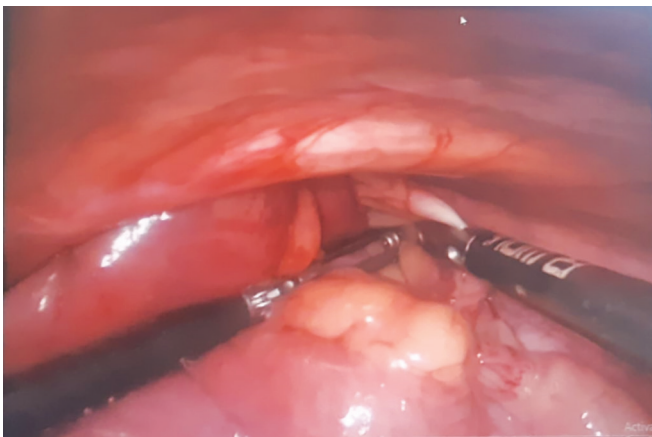
**Patient consent statement:** The author(s) have obtained written informed consent from the patient for publication of the case report details and related images.

occasional painful groin swelling for over a year but it suddenly got bigger with persistent pain. Symptoms included vomiting, progressive abdominal pain, mild abdominal distension, and constipation. Clinical evaluation revealed a blood pressure of 110/70 mm Hg, heart rate 96 min, respiratory rate 24 min, and 37.8°C body temperature. There was a painful, tense, non-reducible, pear-shaped, 5 × 3 cm lump on the right groin. An urgent diagnostic laparoscopy was performed; after adequate resuscitation; for a suspected strangulated right inguinal hernia. It revealed a tight right deep inguinal ring with ileal loops forming a W-shaped orientation and an adherent inflamed appendix as the hernia sac content (Figs 1 and 2). Dense adhesions were noted between the ileal loops.

Appendicectomy was performed after adhesiolysis. However, it was difficult to reduce the intestinal loop by laparoscopy hence



**Fig. 1:** The W-shaped orientation of ileal loops (note the brown-colored free fluid)



**Fig. 2:** The inflamed appendix: base can be seen; tip still adherent inside the hernia sac

an oblique right groin incision was made. An indirect hernia sac was encountered with the testis and a loop of small intestine as content. The tight deep ring was divided to facilitate reduction of the dusky and edematous bowel surrounded by dark-brown free fluid. With 100% oxygenation and warm saline fomentation, the intestinal loop regained normal color and peristaltic contraction. An orchidectomy was performed and the hernia sac was excised. Moloney's darn hernia repair was carried out. Manual bowel decompression and adhesiolysis were then performed through the slightly extended umbilical port incision. The patient made a smooth recovery and was discharged on the 5th postoperative day. Histopathological examination confirmed the diagnosis of acute appendicitis.

## DISCUSSION

A Maydl hernia is a rare variant of an inguinal hernia and occurs when there are two loops of small intestine within a single hernia sac, forming a "W" shape. Therefore, it is called a "W hernia" or "hernia-in-W" and it is particularly more susceptible to strangulation and the intervening intra-abdominal loop is also at risk of a closed loop obstruction.<sup>4</sup>

Although there is a scarcity of literature regarding Maydl's hernia, in their review, Narang et al. reported resection of various parts of the intestine as a result of Maydl's hernia and the incidence

of strangulation ranged between 0.6 and 1.9%,<sup>5</sup> similar to the suggestion of Weledji et al. (<2%).<sup>6</sup> Therefore, prompt surgical intervention is mandatory if Maydl's hernia is suspected.

The presence of an inflamed appendix in an inguinal hernia sac is called an Amyand hernia, in memory of Claudius Amyand (1660–1740), who reportedly performed the first appendectomy within an inguinal hernia.<sup>7</sup> It is difficult to determine with certainty the true prevalence of Amyand's hernia. An incidence from 0.14 to 1.3% when only the appendix is present within an inguinal hernia sac has been reported in retrospective studies, whereas the presence of appendicitis in the inguinal hernia is still rarer, arguably from 0.07 to 0.13%.<sup>7</sup>

Amyand's hernia contains an inflamed or perforated appendix as content.<sup>8</sup> Scrotal symptoms may be confused with acute hydrocele, testicular torsion, or epididymo-orchitis. Imaging of inguinal hernias is not routine, so preoperative diagnosis is not common.

The surgical management of Amyand's hernia was controversial but Losanoff and Basson came up with their classification in 2007 in an effort to standardize the surgical approach.<sup>9</sup> In summary, they recommend avoiding mesh insertion in the presence of appendicitis and/or sepsis.

Left-sided Amyand's hernia is very rare and may be linked to underlying conditions like situs inversus, malrotation, a mobile caecum, and an excessively long appendix.<sup>7</sup> Appendectomy in cases of left-sided Amyand's hernias should be performed promptly regardless of whether there is inflammation or not. This would avoid future diagnostic dilemmas if appendicitis occurs. Mesh repair is generally contraindicated in the presence of inflammation and infection. In our case, the hernia sac and the testis were removed so only darn repair was sufficient.

In this case the hernia was of the congenital type with persistently patent processus vaginalis, a condition we frequently encounter in adult patients.

## Clinical Significance

The co-existence of both Maydl's and Amyand's hernias with inflamed appendix is exceptionally rare. Preoperative imaging may give a clue in suspected cases but the advantage of diagnostic laparoscopy can't be over-emphasized.

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