

Perineal hernia repair following tailgut cyst excision: A case report and literature review of optimal management strategies

Dimitrios Linardoutsos^{1,2}, Despoina Kanata¹, Maximos Frountzas¹, Ioannis Constantinides³

¹First Propaedeutic Department of Surgery, Hippocraton General Hospital, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece, ²Department of Surgery, Metropolitan General Hospital, Athens, Greece, ³Department of Plastic Surgery, Metropolitan General Hospital, Athens, Greece

ABSTRACT

Perineal hernias, categorised as primary or secondary, pose a clinical challenge necessitating surgical intervention. Herein we present the surgical management of a postoperative perineal hernia of the retrorectal space. A 42-year-old female patient presented to the clinic with symptoms such as perineal discomfort, bulging, and constipation after previous surgical tailgut cyst excision. Diagnosis involved MRI, confirming rectal herniation into the retrorectal space. The surgical approach featured a perineal intervention using a unilateral inferior gluteal flap to reinforce the posterior rectal space, avoiding mesh complications. The patient experienced a successful recovery, highlighting the importance of tailored interventions based on symptoms and complications. Secondary perineal hernias, often postoperative, present diverse challenges influenced by multiple factors such as pelvic surgeries. Surgical repair options include perineal and abdominal approaches, mesh usage, and flap methods, each with variable outcomes. This case study contributes to the evolving understanding of perineal hernias, emphasising the need for multidisciplinary approaches and ongoing research to enhance management strategies in this complex clinical scenario.

Key Words: *Perineal; hernia; tailgut; cyst; repair*

INTRODUCTION

A perineal hernia (PH) refers to the protrusion of extra-peritoneal or intraperitoneal contents into the perineum, resulting from a congenital or acquired defect of the pelvic floor muscles [1,2]. PHs can be classified into anterior and posterior according to their position in relation to the superficial transverse perineal muscle [3]. While PHs are generally infrequent, they can be categorised as primary

or secondary. Primary PHs are linked to congenital and embryological deformities, whereas secondary hernias are acquired and usually arise postoperatively, particularly following major pelvic surgeries such as abdominoperineal resection (APR) [4]. The latter is the most prevalent and is characterised by symptoms such as presence of a palpable bulge, overlying skin erosions, abdominal pain, obstructive defecation symptoms and urinary disturbances [5].

Despite the rarity of PHs, a variety of surgical approaches have been employed for their treatment, triggering debates regarding the optimal choice that produces the most favourable outcomes with minimal complications [6]. Both abdominal and perineal approaches, along with the use of biological or synthetic mesh or flaps have been employed so far. These methods can be executed

Corresponding author:

Despoina Kanata
114, Vas. Sofias Ave., Athens 11527, Athens, GREECE
Tel.: +30 6977731147, e-mail: despkanata1@gmail.com
ORCID iD: <https://orcid.org/0009-0000-7294-1940>

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through open or endoscopic procedures, [7,8]. In this case study, we present the case of a posterior PH involving the herniation of the rectum into the retrorectal space after a tailgut cyst excision surgery. An informed consent was provided by the patient.

CASE PRESENTATION

A 42-year-old female patient presented in our clinic reporting three years of worsening perineal discomfort, posterior perineal bulging, lower back pain, chronic analgic posture resulting in spondyloarthropathy and worsening constipation with the need of digital perineal support. The patient had never smoked and was slightly overweight (BMI 27 kg/m²) with an unremarkable medical history, which included two physiologic labors and a surgical tailgut cyst excision, with partial coccyngectomy three years ago. Upon clinical examination, a soft mass was identified in the posterior perineal region, indicative of bowel herniation into the retrorectal space. Subsequent MRI of the lower abdomen revealed and confirmed the existence of a postoperative rectum herniation within the presacral space, specifically at the level of the S5 vertebra (Figure 1).

Surgical intervention was the treatment of choice for

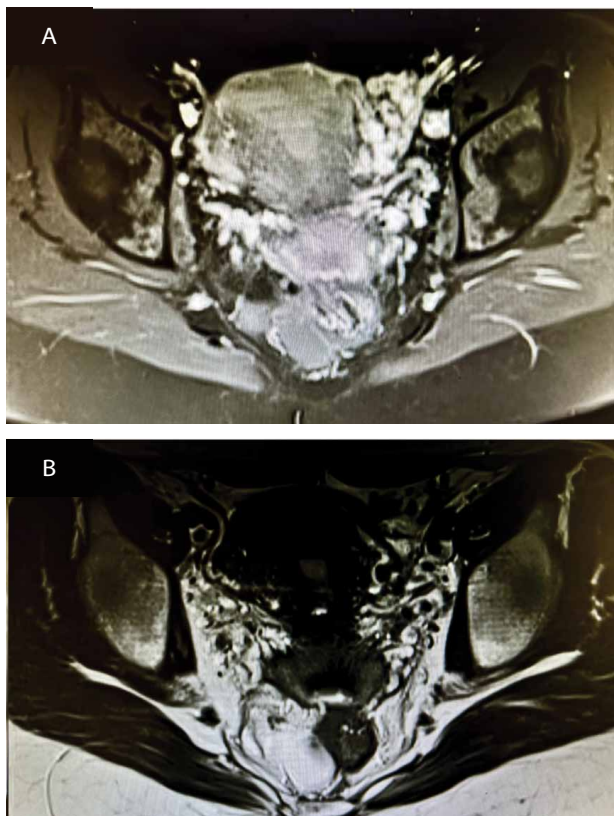


FIGURE 1. A: T1-weighted MRI sequence indicating rectal protrusion below S5 level. B: T2-weighted MRI sequence indicating rectal protrusion below S5 level.

this perineal hernia, indicated by the aforementioned symptoms and the spondyloarthropathy resulting from the chronic analgic posture. A bag enema was administered for bowel preparation the day before surgery. A longitudinal procedure was performed and a perineal sac with the underlying posterior rectal wall was detected (Figure 2). The gluteal fascia was detected and prepared bilaterally. Because of the very thin layer of the sac and to avoid possible mesh erosion any fistulization in the future, the use of perineal mesh was not preferred. The posterior rectal space was reinforced with a unilateral inferior gluteal flap. The flap was prepared from the right side, part of the skin was excised and got positioned deeply to get attached to the opposite gluteal muscle fascia (Figure 3). With this technique, there is a strong support against posterior herniation, with the advantages of avoiding mesh complications. Because of the extra traction forces at this part of the body, a double suture technique was chosen. A suction drain was placed and was removed on the third postoperative day. Patient had an uneventful recovery, well healing and on postoperative review demonstrated great improvement and comfortable seating, as well as no obstructing defecation symptoms (Figure 4).

DISCUSSION

Secondary PHs could rarely develop after significant pelvic surgeries, such as APR, extralevator abdominoperineal excision (ELAPE) or pelvic exenteration (PE), typically within 6 months to 5 years postoperatively. After APR, PH requiring repair occurs in less than 1% of cases, compared to approximately 3% after PE [9,10], but the true incidence might be higher due to the non-reported asymptomatic PH. These hernias often arise when only ischioanal fat and skin remain for perineal, allowing for small bowel herniation.

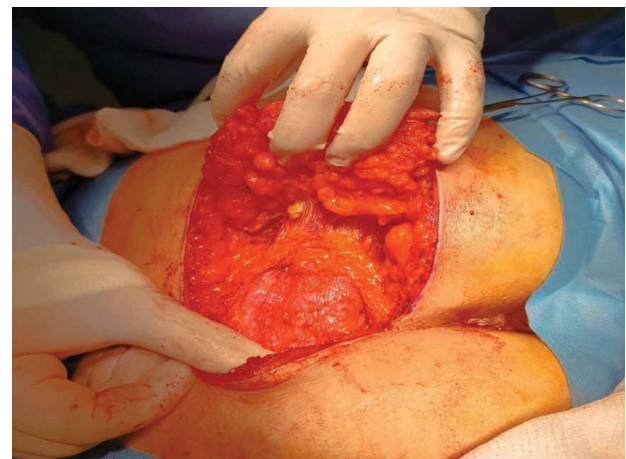


FIGURE 2. Perineal sac with the posterior rectal wall.

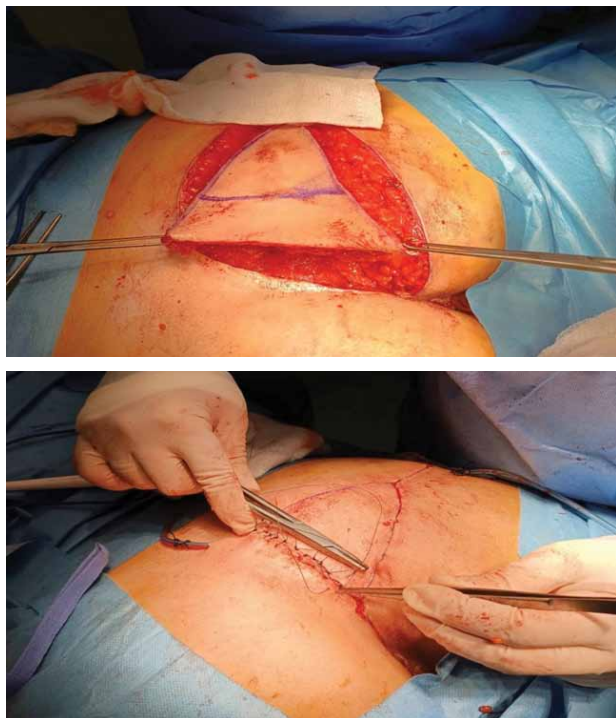


FIGURE 3. A: Flap preparation. B: Flap attachment.

Various other factors contribute to PH formation after surgery, including obesity, smoking, female gender, previous hysterectomy, coccygectomy, pelvic radiation therapy, and perineal wound infection [11-14]. Speculation still exists that the incidence of PH has risen during the last years, due to the advances in rectal cancer treatment with the use of neoadjuvant radiotherapy, which seems to raise the risk of perineal wound complications [10,13]. In our case, a prior pelvic surgery involving the resection of the anococcygeal ligament and partial coccygectomy facilitated the herniation of the rectum into the retrorectal space.



FIGURE 4. Postoperative healing.

While the majority of PHs following APR and PE are asymptomatic and go unnoticed, symptoms may include bulging, discomfort, pain, small bowel obstruction, incarceration or strangulation, and dysuria [2]. Diagnosis can be challenging unless significant signs and symptoms are present, prompting a high index of suspicion, especially in patients with perineal pain. The potential differential diagnosis of PHs encompasses lipomas, rectoceles, fibromas, rectal prolapse, and sciatic hernias. Imaging techniques such as herniography, CT scans, pelvic floor ultrasound, defecography studies and dynamic MRI could establish the diagnosis [15,16].

Surgical repair of a PH is indicated when associated symptoms develop. Other indications include complications like small bowel obstruction and or strangulation, skin breakdown, and evisceration [8]. However, the surgical approach to the hernia defect poses challenges due to the confined pelvic space, the need to reduce and control the bowel, as well as ensuring adequate mesh fixation. Various surgical strategies have been suggested for the management of PH, including diverse approaches (abdominal or perineal or combination of both, open or minimally invasive) and different closure techniques (primary perineal closure, non-absorbable mesh, composite mesh, biological mesh, flap reconstruction) [17-19]. Ongoing research is also focused on PH prevention, exploring the potential benefits of synchronous reconstruction of the pelvic floor following rectal excision [20-22].

Based on the available literature, predominantly of case reports and small case series with limited meta-analyses and systematic reviews, perineal approach has been the preferred method for repair [4,7,8]. This preference is attributed to a broader exposure of the surgical field compared to the abdominal approach, facilitating mesh placement, fixation, and the repair of cutaneous defects. However, the combined abdominoperineal approach has gained popularity during recent years, because it combines the advantages of the perineal approach with the easier mobilization of the herniated contents offered by the abdominal approach. However, morbidity, overall complications and surgical site occurrences (SSO) exhibit significant heterogeneity across studies comparing perineal and abdominal approaches, while recurrence rates appear similar. Regarding the promising combined approach, data is limited and it is premature to draw conclusive insights for its use. Currently, an abdominal approach can be pursued laparoscopically, which maintains the benefit of the abdominal approach with all of the advantages of minimally invasive approaches, also showing a low recurrence rate [23-25].

Concerning the methods of PH repair, there has been

a decline in primary repairs over the past decades, accompanied by a rise in mesh repairs. However, primary repair remains a viable option for patients who do not prefer or present contraindications for mesh implantation [7]. Overtime, there has been a growing utilization of biological mesh, which has been linked to lower infection rates and overall morbidity, and synthetic mesh, which has been associated with decreased recurrence rates. Notably, a recent meta-analysis suggested that the flap method had the lowest recurrence rates, but the limited number of cases treated with this method prevents us from drawing safe and significant conclusions [8]. Another synchronous meta-analysis suggests that there are no significant differences in recurrence between the use of synthetic or biological mesh. However, the addition of a tissue flap to mesh repair may yield favorable outcomes [26].

CONCLUSION

In conclusion, perineal hernias represent a challenging clinical entity, with diverse etiologies and evolving management strategies. Surgical repair remains the primary choice for symptomatic perineal hernias, guided by individual patient characteristics and preferences. The shift towards mesh and perineal repairs underscore the dynamic nature of treatment trends. However, the heterogeneity in outcomes and recurrence rates across different surgical approaches warrants careful consideration in selecting the most appropriate strategy. In essence, perineal hernias demand a nuanced and multidisciplinary approach, reflecting the evolving landscape of surgical interventions and highlighting the need for ongoing investigation to enhance our understanding and management of this complex condition. The present case study sheds light on the intricacies of diagnosing and treating a posterior perineal hernia, emphasizing the importance of tailored interventions based on associated symptoms and complications.

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