Perineal hernia, another incisional hernia?

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Abstract A secondary perineal hernia is a type of incisional hernia of the pelvic floor, occurring after pelvic surgery such as abdominoperineal excision of the rectum and pelvic exenteration. Our aim is to review the available literature on the subject. This report reviews a recently repaired case, followed by a review of the available literature on the presenting condition, concentrating on approaches and methods of repair. Perineal hernias are uncommon, and not many surgeons face them. It is not known if and how these hernias could be prevented. The method and approach of repair should probably be individualized, but we believe that the use of a mesh is important in the repair of such hernias because of the significant tissue defect prevailing in most of the cases, in addition to the unhealthy tissues related to the use of radiotherapy. The laparoscopic approach has been recently utilized and its use is expected to increase.

Keywords Perineal hernia · Mesh · Repair

Introduction

Perineal hernias are hernias of the pelvic floor. There are 2 types: primary and secondary, both of which are uncommon. A secondary perineal hernia is a type of incisional hernia occurring after major pelvic surgery, like abdominoperineal resection (APR), pelvic exenteration (PE) and perineal prostatectomy. The first case was reported in 1939 by Yeomen [1]. Since then there were many single case reports and a few small series reported in the literature [2, 5] describing the condition and its repair. We present the case of a patient who developed this hernia, and the method of repair at King Hussein Cancer Center. This is followed by review of the literature about this condition.

Case report

A 72-year-old female patient was diagnosed with a low rectal cancer. This was excised locally in another hospital. About a year later, she developed a local recurrence. This was excised again.

She presented to us 2 months after that excision with another local recurrence. The tumor was at the anterior rectal wall, involving the posterior vaginal wall. After excluding distant metastasis she underwent posterior pelvic exenteration. The pathology report showed a moderately differentiated adenocarcinoma invading the posterior vaginal wall and reaching the vaginal mucosa, with 1 LN involvement (T4N1M0). The tumor was completely removed (R0). The operation was uneventful, and the patient recovered well.

Three months after the operation, the patient started complaining of a perineal bulge and discomfort. The diagnosis of a perineal hernia was made clinically (Fig. 1) and

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was complemented by a CT scan (Fig. 2). The scan did not show any evidence of local or distant disease.

The patient was planned to have local radiotherapy at that time, so it was decided to do the hernia repair before the radiotherapy, to avoid injuring the herniated bowel and to avoid the difficulties of operating in an irradiated field.

The repair of the hernia was done using a combined abdominoperineal approach. The hernia contained omentum and small bowel. Mobilization was done (Fig. 3). A

perineal incision incorporating the previous scar was used to open the sac from below (Fig. 4). The redundant skin with the hernial sac were excised. Repair was done using a Vypro mesh sutured to the posterior vaginal fornix ante-

Fig. 1 The perineal hernia

Fig. 2 CT reconstruction of the pelvis showing a small intestinal loop in the perineal hernia

Fig. 3 The hernia from inside after dissection and reduction of the contents

Fig. 4 The hernial sac opened from the perineum and excised along with excess skin

riorly, fascia over the upper sacrum posteriorly and lateral pelvic walls laterally (Fig. 5). The omentum was mobilized and brought down to cover the mesh on its upper surface (Fig. 6). After inserting a Redivac drain, the sac and perineal skin were closed from below (Fig. 7). The drain was removed after 5 days and the patient was discharged home in good condition. The patient was asymptomatic and did not have any recurrence when she was last examined 32 months after her operation. A repeat scan at that time showed the repair intact.

Discussion

A perineal hernia is an uncommon hernia. It is reported in less than 1% of patients after APR [2,3,12] and from 3% to 10% after PE [3–9]. Some argue that the incidence is probably higher [6, 10] and that many cases are asymptomatic. It occurs more commonly in females [6, 7, 11, 12], probably due to the wider pelvis outlet. Other predisposing factors cited in the literature include: large pelvic resection or multiple resections, previous hysterectomy, radiotherapy and wound infection [2, 3, 5, 8, 9, 21].

Presentation is usually during the first postoperative year [13], suggesting a technical etiology. Symptoms might include some perineal fullness and discomfort, perineal descent, pain, and sometimes bowel obstruction and urinary symptoms [13]. Clinical examination usually reveals a perineal swelling with a positive cough impulse. Bowel loops might be seen or felt, and in some cases the skin might be attenuated or ulcerated.

Fig. 5 Mesh fixed

Fig. 6 Covering the superior aspect of the mesh with omentum

Fig. 7 The perineal wound closed after inserting a drain

Repair of a perineal hernia is a challenging problem. Although the principles are the same as those for repair of other hernias, some obstacles are unique to this type of hernia. There were many methods or repair during the past 80 years or so. It is difficult to know which is best because of the small number of patients reported.

One method is primary repair of the perineal defect [14]. This is usually not feasible, though, because the edges of the defect cannot be approximated in many cases [13]. Another way is to bridge the defect with a variety of tissues like peritoneal grafts, dura [15] and fascia lata grafts [5], omental carpet, uterus [8, 9] and even the bladder [27]. Most of those methods of tissue coverage are not used anymore.

Flaps can be used to cover the defect. This has the added benefit of good vascularity (especially helpful in ischemic tissues post radiotherapy, and in cases where there is infection). Gracilis myocutaneous flap was first introduced in 1978 by Bell et al. [16], and was later used by others [11, 13, 17].

Probably the most common approach nowadays is repair by using a synthetic mesh, like nylon, marlex or prolene [2, 5, 18, 19]. This method is gaining wider acceptance, as what happened in the repair of other types of hernias. Our patient's hernia was repaired using a Vypro mesh with good results.

There are different approaches for the repair of the perineal hernia. The perineal approach [1, 6, 14, 16, 21–23] is the simplest, but exposure might be inadequate and bowel injury might occur. The transabdominal approach [10, 24] gives better exposure, mobilization can be done from above under direct vision, and recurrent or metastatic disease can be excluded. In addition other abdominal procedures can be done at the same time. These 2 approaches can be combined [2, 15, 25]. This gives the advantages of the abdominal procedures and allows excision of the redundant and attenuated perineal skin.

The laparoscopic approach has been recently used in the repair of these hernias. The first reported laparoscopic perineal hernia repairs were done in 2002 [20, 26]. In one of those cases [20] the patient had an additional repair of a parastomal hernia laparoscopically.

It is difficult to know the recurrence rate after repair as the cases studied are few and the methods of repair are different. In one study [21], the recurrence rate was 16% among 13 hernias repaired using the perineal approach. Half of those patients had a mesh.

Conclusion

Perineal hernias are uncommon, and not many surgeons face them. It is not known if and how these hernias can be prevented. There is more than one way to repair these hernias. The method and approach of repair should probably be individualized, depending on the primary operation, condition of the patient, previous radiotherapy, symptoms

and size of the hernia and the surgeon's experience and preference.

We believe that the use of a mesh is important in the repair of such hernias because of the significant tissue defect in most of the cases, in addition to the unhealthy tissues related to the use of radiotherapy, making the utilization of local tissues difficult. Pedicled flaps might overcome those problems, especially in the presence of infection. The transabdominal approach should probably be used in those patients, alone or in combination with the perineal approach. It is expected that the laparoscope will gain wider acceptance as the experience with it improves.

Perineal hernias will continue to be a challenge to the surgeon, because they are uncommon, and because of the difficulty in repair due to defective and unhealthy tissues involved.

Conflict of interest The authors do not have any disclosable interest

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