Case report

Repair of posterior perineal hernia with biological mesh: a case report

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Abstract: *Introduction*: Perineal hernia is un uncommon and challenging surgical condition characterized by posterior dislocation of the rectum or other intestinal tract through a weak or damaged pelvic floor, causing obstructed defecation and requiring surgical repair by an experienced surgical team. *Methods:* Herein we report the case of a posterior perineal hernia (posterior rectocele) occurred in a patient after surgical drainage of a perineal abscess and causing severe obstructed defecation. After diagnostic work-up, including dynamic defecography and anorectal manometry, the perineal defect was repaired by means of a biological mesh of bovine pericardium. *Results:* The postoperative course was uneventful and the medium term outcome, evaluated by a dedicated severity of disease and quality of life questionnaires, was significantly improved. *Comment:* Use of biological mesh can be useful in the repair of difficult cases of posterior perineal hernia where the risk of infection and direct contact with the viscera makes other choices more risky.

Key words: Pelvic floor hernia; Biological mesh; Perineal hernia; Posterior rectocele.

INTRODUCTION

Pelvic floor hernia is a rare condition, often difficult to diagnose, characterized by the protrusion of intra-abdominal viscera through a defect in the pelvic floor.

The first description of this condition was a case of perineal hernia after a proctectomy.[1] Since then several other cases, with different etiology and modality of care, were published.

Three types of pelvic floor hernias can occur according to the site of pelvic fascial weakness or interruption: obturator, perineal and sciatic hernias.[2] Furthermore perineal hernias may be distinguished in primary and secondary.[3] Primary perineal hernias are extremely rare and generally occur through defects in the pelvic floor musculature. They usually occur between the ages of 40 and 60 years and are five times more common in women due to the larger female pelvis and due to a weakness of the pelvis floor after pregnancy and childbirth.[2] Secondary forms of perineal hernias are incisional hernias occurring in patients mainly after accidental or iatrogenic pelvic injury like in abdominal perineal resection of the rectum or pelvic exenteration for advanced rectal cancer. A large portion of the pelvic floor is removed during these procedures, creating a defect that allows the pelvic organs to descend through the pelvis into perineum.[4] The incidence is estimated about 1% after abdominal perineal resection and 3 to 10% after pelvic exenteration.[3] Secondary perineal hernias also may occur after urogenital and gynaecological operations,[5] usually during the first year after surgery.[3]

Further classification is related to their anatomic position anteriorly or posteriorly in relation to the transverse perineal muscles. The orifice of the anterior form is located in the urogenital diaphgram and this implies that in women clinical manifestation is represented by a prolapse, lateral to the vagina in the area of the labia while the posterior form of perineal hernia is rare and protrudes either through the levator ani muscle or between the levator ani muscle and coccygeus muscle and so the pelvic organs can herniate into the ischio-rectal fossa, becoming evident as an unilateral swelling in the perineal or gluteal region.[6,7] Generally perineal hernias are not symptomatic with the exception of a bulge: at clinical examination there is a soft, reducible and usually uncomplicated bulge which increase its size during Valsalva manoeuvre. Perineal pain, obstructed defecation, perineal skin erosion, perineal fullness and discomfort, urinary symptoms[4] are the most frequently complained in these patients. Clinical complication like strangulation is unusual because the hernia neck tends to be wide and the muscular defect elastic.[7]

CASE REPORT

A 70-year old female patient was visited in our colorectal unit complaining of severe outlet obstructing constipation, and a swelling of the left buttock during straining to defecate. To help defecation she constantly used stimulating laxatives, enemas and manual sustainment of the bulging perineum. Her clinical history included an open cholecystectomy for gallstones, hysterectomy for uterine polyps and perianal incision for the drainage of a left perianal abscess. A rectosigmoidoscopy and a pelvic magnetic resonance showed no evidence of organic disease.

At clinical examination a large defect in the posterior left pelvic floor was evident, due to iatrogenic injury of the levator ani muscles caused by the deep incision for the abscess drainage.

A dynamic colpodefecography using a new contrast medium mimicking the normal stool consistency, specific weight and temperature (Bariogel, THD, Correggio RE, Italy) showed a large non-emptying posterior hernia (rectocele, Figure 1), more evident during straining at defecation which completely prevented rectal emptying. The severity of the defecatory disturbance was scored 20/31 using the ODS (obstructed defaecation score) scoring system[8] and the consequent impairment of the patients QoL (Quality of life) was 95/100 using the SF36 questionnaire,[9] while anal manometry did not show significant alteration of the resting and squeezing anal pressures.

The patient was then submitted to reparative surgery under spinal anesthesia and in Jack-knife position.

A right perianal longitudinal incision was made and the rectum and meso-rectum were exposed. The anococcygeus raphe and the residues of the right levator ani muscles were identified but could not be approximated due to the retraction of the muscles ends and the partial destruction by the previous surgical procedure. A biological, biodegradable 10x10 cm large mesh, Tutomesh®, (imported by Abasan, Bari, Italy) consisting of bovine pericardium tissue was rehydrated by few minutes inclusion in saline solution containing 1 gr of kefalosporin, remodeled according to the

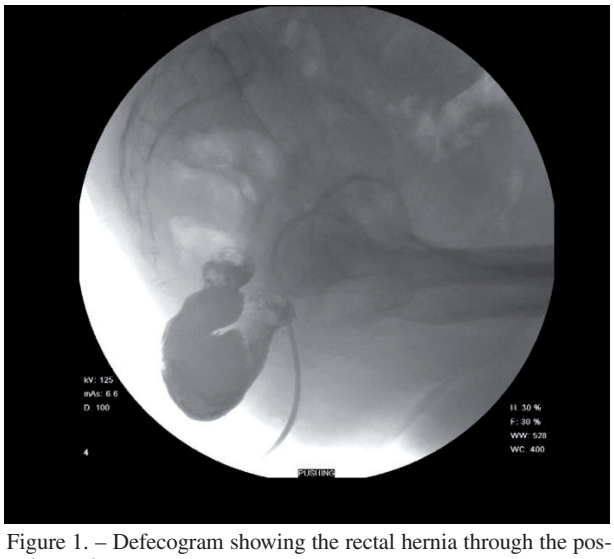

Figure 1. – Defecogram showing the rectal hernia through the posterior perineum at rest.

shape and size of the perineal defect and used to repair the posterior perineum (Figure 2).

The mesh was sutured to the residual muscle-aponevrotic tissue and anococcigeal raphe and to the ischial tuberosity with Prolene 3/0 interrupted sutures. A subcutaneous drainage was placed to prevent a seroma formation. A prophylactic antibiotic therapy was started just before surgery and continued for two days postoperatively. The postoperative period was uneventful and the patient was discharged from the hospital two days after with the prescription to use oral antibiotics for further five days and oral laxatives for at least three months. At three months follow-up the patient showed clear improvement of the defecation with absence of tenesmus and need of digital manoeuvres to empty the rectum. Postoperative score was 7 for ODS and 98 for SF36.

At six month follow-up, however clinical examination evidenced a moderate, but asymptomatic recurrence of the left buttock swelling. The patient complained only little pain in the area of the bulge but the defecation of soft stools was easy and satisfactory.

DISCUSSION

The correct approach to repair perineal hernias is still a challenging surgical problem since the surgical technique and optimal modality of perineal repair has never been established because of the difficulty to perform prospective randomized trials on and adequate number of homogeneous patients because of the rarity of the disease.[7-10] Furthermore the complexity of the anatomy of the pelvic floor and the different aetiology of the disease make comparison between the case reports very uncertain. Furthermore there is also scarce information about long term outcomes. Different approaches for treating perineal hernias have been proposed in the literature: abdominal,[11] perineal,[5-12] combined abdomino-perineal[13-14] or laparoscopic;[15] these different surgical techniques are almost always associated with use of autologous tissues or prosthetic mesh (synthetic or biologic) repair of the pelvic floor defect or to reinforce the muscle weakness. Most of the cases of perineal hernia follow the abdomino-perineal excision of the rectum where the pelvic floor muscles are resected or severely damaged, while in our case the hernia was caused by an inappropriate surgical manoeuvre aimed to drain an abscess in the ischiorectal fossa resulting in the complete interruption of the levator ani muscles on the site of the abscess. This clinical features made the perineal approach the most appropriate to reach the muscle defect without the risk of nerve injury of the abdominal approach. In fact the paramedian incision of the buttock gave immediate and easy access to the muscle defect and to the mesorectum without bleedings. With regards to the reconstructive techniques, like in most of the other cases reported in the literature, it was not possible to approximate the muscle edges and the use of a mesh was mandatory. Nowadays completely re-absorbable biological meshes are available but at higher cost compared to synthetic ones. The choice of an expensive biological mesh was made considering several factors like the direct contact with the viscera, the risk of infection because of the proximity to the anus, the potential high risk connected to re-operation to remove the mesh in case of infection or erosion.

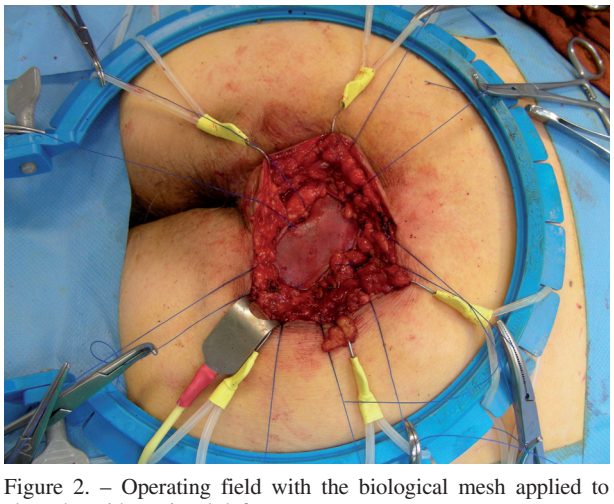

Figure 2. – Operating field with the biological mesh applied to close the wide perineal defect.

Biological meshes have been introduced in the clinical practice with the aim of reducing mesh-related complications but this advantage may be theoretically counterbalanced by a higher recurrence rate. Various complications related to the use of synthetic meshes have been reported including erosion of the viscera, that may occurs early (6 weeks postoperatively) or even many years after surgery, infection with an incidence up to 8%, fistulae, foreign body reaction, fibrosis, calcification, pain, dyschezia etc.[16] Trabuco et al reviewed the MedLine literature about the use of xenograft meshes in reconstructive pelvic surgery both in humans and animal models concluding that due to the poor quality of evidence there is a little evidence supporting the use of biological meshes and that only a good randomized controlled trial with appropriate sample size and long term follow-up can answers the question about the advantages of biologic meshes.[17] Furthermore the few data available are confusing since different types of biological meshes have been used. In fact they can be distinguished between autologous (such as fascia lata or rectus fascia), allograft (like fascia lata or dermis from cadaver) and xenograft (tissues taken from porcine or bovine).[18] The authors report the histological reaction of the host and conclude that the response to xenograft (porcine dermis, bovine pericardium, porcine small bowel submucosa) is similar to the response to synthetic graft. Among xenograft mesh, non-cross linked xenografts are rapidly colonized by fibroblasts and completely replaced by endogenous host connective tissue, and completely resorbed by the host thus obviating the problems related to synthetic materials.[17] Tutomesh belongs to this type of meshes and has good elasticity combined with strong resistance to the pressure and is completely colonized and degraded by endogenous fibroblast within 6-12 months, allowing the host fibroblasts to deposit new collagen and

promote angiogenesis. Furthermore due to its composition it can be placed in contact with the viscera and because of its non-synthetic nature is more resistant to infection. Similar advantages have been reported by other Authors[19] with this bio-resorbable mesh in other parts of the body while the potential higher risk of recurrence has never been documented.

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