ANAL SPHINCTER TRANSECTION-REPAIR BY OVERLAP SPHINCTEROPLASTY

Muhammad Azhar Qureshi

PAF Hospital, Faisal Air Base – Karachi

INTRODUCTION

Anal sphincter transection is a serious injury whether due to obstetric mismanagement or non-obstetric trauma. Most of these cases result from damage to anal sphincter mechanism in 3rd or 4th degree perineal tears. Non-obstetric causes are the result of transanal impalement injuries, anal intercourse, anal rape, and as a result of fall over projected objects. These injuries may also occur in hyperabduction of thighs in motor vehicle accidents, when a perineal laceration can extend through the anus into the rectum. Repair of anal sphincter was traditionally done with end-to-end repair but now the preferred method of sphincter repair is by overlapping technique [1].

CASE REPORT

A young male was admitted in surgical ward with a day old history of fall over a sharp metallic object leading to transanal impalement injury and complete transection of internal and external anal sphincters at 5O `clock position when examined in lithotomy position. He developed fecal incontinence along with regional sepsis. Defunctioning colostomy by Hartmann's procedure was carried out. Perineal wound was left open for free drainage, dressing and debridement. When it was clean sphincter repair was carried out under general anaesthesia. The internal anal sphincter was identified as a glistening, white, fibrous structure between the rectal mucosa and the external anal sphincter and was repaired with continuous 2-0 polyglactin sutures. The external anal sphincter was identified as a band of skeletal muscle with a fibrous capsule. It was mobilized sufficiently to gain an overlap of about 2 cm extending the length of anal canal and was secured using 2-0 interrupted polyglactin sutures. Wound was left open to heal by second intention and the patient was encouraged pelvic floor exercises. After complete healing of perineal wound colostomy was closed. The patient is now completely continent for flatus and faeces.

Correspondence: Wing Cdr Muhammad Azhar Qureshi, Classified Surgical Specialist, PAF Hospital, Faisal – Karachi.

DISCUSSION

The anal sphincter complex lies inferior to the perineal body. The external anal sphincter is composed of skeletal muscle. The internal anal sphincter, which lies superior to the external anal sphincter, is composed of smooth muscle and is continuous with the smooth muscle of the colon (figure). It provides most of the resting anal tone that is essential for maintaining continence. The anal sphincter complex extends for a distance of 3 to 4 cm [2]. Cases of anal sphincter injury are not uncommon. Half Percent to 2.5% women suffer from anal sphincter disruption during vaginal deliveries. More than 30% with 3rd degree perineal tear develop incontinence out of which 34 % have flatus incontinence [3] this quantifies the problem in a developed country though indigenous studies, whether obstetric or non-obstetric, are lacking on this subject.

Whatever the cause, anal sphincter damage requires careful management to avoid life long fecal incontinence. Proper examination, preferably under general anaesthesia is of paramount importance in all cases of anorectal injuries. Digital examination and proctoscopy will reveal extent of involvement. Endorectal ultrasonography and anal manometry can detect anatomic and functional deficit [4] while Pudendal Nerve Terminal Motor

Latency (PNTML) is performed to assess damage to pudendal nerve itself.

There are two techniques used for sphincter repair. Before 1940's end-to-end sphincter repair was a common procedure. Later on due to high failure rate overlapping sphincter repair was introduced to increase the surface area in contact for better results. This technique brings together the ends of the sphincter with mattress sutures and results in a larger surface area of tissue contact between the two torn ends. Dissection of the external anal sphincter from the surrounding tissue may be required to achieve adequate length for the overlapping of the muscles. The suture is passed from top to bottom through the superior and inferior flaps, then from bottom to top through the inferior and superior flaps. Two more sutures are placed in the same manner. After all three sutures are placed; they are each tied snugly, but without strangulation. When tied, the knots are on the top of the overlapped sphincter ends. Care must be taken to incorporate the muscle capsule in the closure. Different colorectal surgeons differ in technical details, timing of surgery, and whether to do defunctioning colostomy or not [5]. A general consensus is that if there is sepsis in the perineal wound then defunctioning colostomy and local debridement should be done prior to sphincter repair. When perineal wound heals colostomy is closed. Pelvic floor exercises are started as early as possible [6]. It is important to follow a specialized approach to this injury but unfortunately Colpoproctology as a separate specialty is yet to develop in most of our hospitals and it is difficult to find any indigenous comprehensive study or even case reports on this topic. Facilities like Anorectal sonography, anal manometry and Pudendal Nerve Terminal Motor Latency (PNTML) studies are generally not available in most of our hospitals while in advanced countries Acticon Neosphincter implantation has been successfully carried out for irreparable cases [7].

CONCLUSION

Anorectal injuries are not uncommon in general surgical practice. Gynecologists in obstetric cases and general surgeons in non-obstetric cases generally manage them. Anal sphincter repair by overlap sphincteroplasty has become the gold standard and its results are better than simple approximation. General surgeons should be trained in Colpoproctology and these specialized units should be established in all tertiary care centers so that complicated cases are referred there for specialist management. Multi-center short and long term indigenous studies are required to find out the results of various types of repairs in anal sphincter transection.

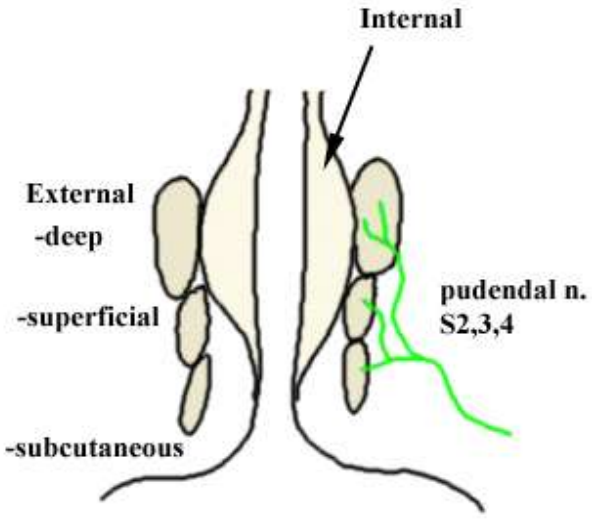

Figure: Anatomy of Anal Sphincters

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