

Graciloplasty For Restoration of Traumatic Anal Incontinence (A Case Report)

TRAVMATİK ANAL İNKONTİNANSIN REKONSTRÜKSİYONU İÇİN
GRASILOPLASTİ (OLGU SUNUMU)

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SUMMARY

Anal sphincter, together with the mechanisms controlling its action, is one of the most important functions of human body. A gradual decrease of this function due to various diseases or a sudden loss subsequent to a major trauma to perineal region, may result in many physical and pschological problems. In this case, a 35 year-old female patient who had a traffic accident was discussed. She had a very havy blast injury to pelvi-gluteal and perianal regions including anal sphincters. An urgent operation was performed for debridement of necrotic tissues and for diverting loop colostomy to protect perianal region. At the second operation a neo-sphincter was constructed by using gracilis muscle flaps. The sphincter function was restored and the patient has regained the ability of continence almost completely by 3 months. As a result we may say that, this method could be used for anal reconstruction for selected cases.

Key Words: Anal sphincter, pelvic trauma, graciloplasty

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Anal sphincter, together with the mechanisms controlling its action is one of the most important functions of the human body. Very serious psychosocial problems also come with the loss of this function. Although the gradual loss of sphincter function due to chronic diseases may be tolerated by patients., sudden loss of this function in a healthy person exposed to trauma, causes much severe psychological problems. Since there is no ideal surgical therapy for the reconstruction, it seems to be more difficult to overcome the case.

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ÖZET

Anal sfinkter ve bunu kontrol eden mekanizmalar, insan vücudunun en önemli fonksiyonlarından birisidir. Bunun fonksiyonunda, çeşitli hastalıklara bağlı olarak kademeli veya perianal bölgeye olan major bir travmayı takiben olan ani kayıplar, birçok fiziksel ve psikolojik probleme neden olabilir. Bu olguda, trafik kazasına uğramış, 35 yaşında bir kadın hastayı tartıştık. Bu hasta, pelvi-gluteal ve perianal bölgede anal sfinkteri de içine alacak şekilde, blast tipte çok ağır bir travma geçirmişti. Acilen yapılan bir operasyon ile nekrotik dokular debride edildi ve perineal bölgeyi korumak amacıyla loop kolostomi açıldı. İkinci operasyonda gracilis kası flepleri kullanılarak yeni bir sfinkter oluşturuldu. Yaklaşık 3 ay içinde hasta, gaitasını kontrol edebilme yeteneğini neredeyse tamamına yakın bir biçimde kazandı. Sonuç olarak biz, kullandığımız bu yöntemin seçilmiş olgularda, anal rekonstrüksiyon için kullanılabileceğini söyleyebiliriz.

Anahtar Kelimeler: Anal sfinkter, pelvik travma, grasiloplasti

CASE REPORT

A 35 year old woman having two children, who was previously healthy, had a traffic accident in April 27, 1994 and she had a very severe blast injury of pelvic area in that perianal region including anal sphincter up to proximal of dentate line was completely lost. Decollement of a large area comprising medial sides of the both thigh, gluteal region and lomber tissues deep to retroperitonium was occured. The patient was urgently operated for hemostasis and debridement. After these two procedures, distal free end of the rectum was found and prepared to attach to skin at the perianal region. A diverting sigmoid colostomy was also performed as a procedure to avoid distal contamination.

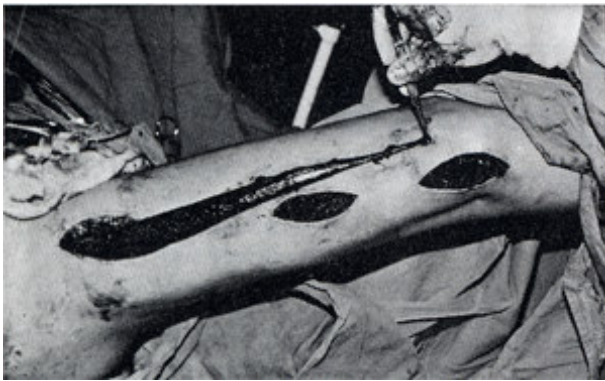


Figure 1.

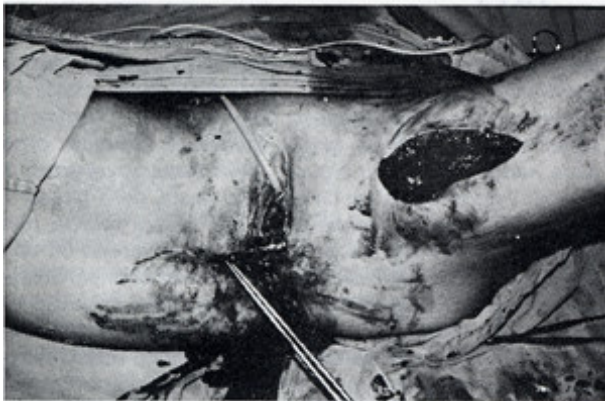


Figure 2.



Figure 3.

Debridements and tissue grafting were repeated many times for wound healing and as we managed this, we have seen that psychosocial problems due to colostomy and loss of anal sphincter function were getting much more prominent. However, the patient

was discharged from the hospital with the diverting colostomy and called for the routine follow up. She was re-admitted in the hospital in a serious depression because of the colostomy and her pessimism of future live. The patient was prepared for a sphincteroplasty operation and the flap of gracilis muscle of the left thigh, since there was much less scar tissue on that side, was transposed to the perianal region in September 16, 1994. (Figure 1,2). EMG control of the flap was performed that showed contractility of the neosphincter and the diverting colostomy was closed subsequently in January 1, 1995 (Figure 3).

Since there was no sphincter activity prior to the operation, the result should be accepted much more successful that it could ever be. During 12 month's follow up the frequency of defecation gradually decreased and it is about one or two times daily and neosphincter function is satisfactory for the passage of stool unless she has diarrhea or excessiv colonic gas. There is anohter important aspect of the case, that all of the psychological problems of the patient disappeared.

CONCLUSIONS

Gracilis muscle transposition technique by Pickrell et al. In 1952, could be accepted as a suitable method for trauma and congenital cases, especially in young patients (7). A permanent colostomy was generally preferred in the patients having a complex anorectal trauma with the sphincter destruction. However numerous techniques were tried for proper sphincter function. Stone and Mc Lanahan, used a fascia segment as purse string, Sistrunk and Hirschman repaired muscle defects as a new approach (3). Slade reported 37 cases, in that he performed successive operations on the sphincter muscle to restore its functions. Chittenden and Bistrom used gluteal muscles for repair, while superficial transverse perineal muscle was used by Knapp (3).

EMG, may be useful not only for diagnosis of sphincter trauma, but also for testing excitibility of gracilis muscle flap during the postoperatif follow up (5). Anatomic studies have shown that, blood supply to the gracilis muscle is segmental. Additionally, stimulation of the main nerve trunk, Obturator nerve, is rather necessary than of peripheric nerve fibers. For the mass contraction of the muscle, that also needs very low voltage (1,4).

In the operation, the patient is given gynecological position. There incisions are made and dissection is continued to reach the neurovascular bundle. The gracilis muscle is mobilized through subcutaneous tunnels. A curvilinear incision between the points 1,5 cm. proximal and distal to anal verge should be made (6). The gracilis tendon is circled around the anal verge and

attached to the contralateral ischial tuberosity by 33 monofilament, nonabsorbable sutures. Gamma –alpha or epsilon-shaped configurations of gracilis muscle around the perianal region were tried before (10), and was shown that whatever the technique is, the angulation of the gracilis muscle should be avoided, otherwise, any folding of the muscle may result in ineffective and any effort for defecation should be avoided. The leader of this technique, Pickrell has reported 85 per cent success in his cases. But there is a controversy about the outcome of this method. For example, Christiansen has reported failure only in 3 cases out of 13, while Yoshioka and Keighley reported no success in their 6 cases (2). Şen and his colleagues, in a series of 11 patients in 10 years, have reported 100 per cent success for four months to 9 years follow-up (9).

Gracilis muscle contracts with medial rotation of thigh and the patient should be trained on this maneuver post-operatively. However, Salmons and Henrikson in their experimental model showed that gracilis muscle was able to be excited by very low electrical currents. Starting from this point, a dynamic graciloplasty method was developed, in that the neosphincter is excited continuously by an electrode. Williams et al, have administered this technique with success (1,11). Rhythm of intestinal activity, stool formation, degree of defecation sensation all effect the outcome following reconstruction. Number of defecations within a day gradually decreases in the postoperative period an it is about three times daily by 3 months (2,10,12). In this case, we have presented a neosphincter that functions well, unless there is diarrhea or excessive colonic gas and frequency of defecation is one or two times daily. In these operation, the aim should not be to struggle to construct an original sphincter that is natural and functionally perfect, since this is not possible to have. However, we may use this method in selected cases for reconstructive graciloplasty.

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