# A modified pathway of perineal packing in patients requiring surgery for perineal fistulas with extensive perineal involvement

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**A modified pathways of perineal packing in patients requiring surgery for perineal fistulas with estensive perineal involvement**

AIM: *To describe a method to manage complex perianal fistulas with extensive perineal involvement, allowing avoidance of exposure of wide wounds and repeated procedures.*
MATERIAL OF STUDY: *All patients presenting with perianal fistulas extensively spreading to the perineum requiring surgery between January 2010 and December 2012 were enrolled in the present study. Diabetic patients and those with active abdominal Crohn's disease (CD) were ruled out from evaluation. After clinical and radiological assessment, patients underwent exploration under anaesthesia, and the conventional procedures were completed with at least one wide perineal fistulotomy, managed with "perineal packing" with gauzes. Patients were followed-up for complications and healing of fistulas.*
RESULTS: *Eight patients (3 males, mean age 38 ± 5.1 years) were enrolled in the present study. Four patients had CD, two had Hidradenitis suppurativa, and two had idiopathic fistula-in-ano. All but two patients were not required to stay overnight. Gauzes were removed in outpatient settings. One patient had bleeding requiring coagulation with electroscalpel. One patient needed to receive analgesics and four wore pads in the maturation period. No sepsis was observed. Mean time to healing was 21.5 ± 3.2 days; mean time off-work was 2 ± 1.3 days. Patients reported no significant impairment of leisure activities. No recurrences were observed at a mean follow-up of 16.4 ± 2.1 months. Major complications were not observed.*
DISCUSSION: *All patients achieved complete healing of the perineal tracks, without significant impairment of social function and need for further surgical treatments. Patients were safely discharged and promptly returned to work or leisure activities.*
CONCLUSIONS: *Our data suggest that the procedure is safe and effective in selected patients with extensive perineal involvement.*

KEY WORDS: Crohn's disease Fistula, Hydradenitis suppurativa, Packing, Perianal fistula, Surgery

## Introduction

Perianal fistulas are a common finding in surgical practice. These are often simple and easily managed. However, some conditions might predispose to complex perianal and perineal diseases, namely Crohn's disease(CD), immunodepression and *Hidrandenitis suppurativa*(HS) [1-8]. Extensive perineal fistulating disease may be difficult to deal with, due to the need for wide incisions. Repeated treatment are often required to avoid bleeding from the fistula bed and wounds which might result intolerable for the patients.
We herein describe a method to manage perineal fistulas by means of a staged approach, requiring only one surgical exploration under anaesthesia(EUA) and follow-ups in outpatient settings, which reduces the risk of bleeding and painful medications, allowing faster return to work.

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## Material and Method

All consecutive patients observed at our Unit between January 2010 and December 2012 presenting with fistula-in-ano with an extensive perineal involvement requiring surgery were considered for the present study.

PREOPERATIVE WORK-UP
All patients underwent clinical examination, flexible procto-sigmoidoscopy, endo-anal ultrasonography, and pelvic MRI scan. A trans-perineal ultrasonographic exam was also carried out.
Patients suffering from diabetes and active abdominal Crohn's disease (defined as presence of obstructive symptoms or Crohn's disease activity index [CDAI] >150) or with CD proctitis requiring specific treatment were excluded from evaluation. all patients failed previous conservative approaches.

SURGICAL PATHWAY
Patients received EUA in the theatre in either lithotomic or prone jack-knife position. Patients received general anaesthesia. Fistula "core-out", fistulotomies, and placement of loose-setons were carried out, as required. In all patients, at least one wide perineal fistulotomy was performed, gauzes were placed on the fistula bed and sutured by means of few non-absorbable stitches. All patients received 1 g of i.v. metronidazole within 1 hour from surgery, and continued postoperatively with oral metronidazole for 6 days (250 mg administered T.I.D.). Long-standing fistulas excised were sent to pathologist. In case of lay-open, random biopsies were taken not to overlook eventual fistula-related malignancies [9,10]. Sketches of the procedure are reported in pictures 1-3.

POSTOPERATIVE MANAGEMENT
Patients were discharged within day 1 postoperatively, after clinical examination. Patients received prescription for antibiotic treatment, stool softeners, and oral analgesics (Ketorolac Tromethamine or Paracetamol).
Patients were subsequently visited in outpatient settings within 2 days from surgery, and gauzes were removed. A superficial protective dressing was subsequently placed on surgical site. The patients were taught to medicate wounds every day with saline solution and were seen in outpatient settings once a week until healing.
Data concerning baseline and demographic characteristics, complications, length of stay, time off work, healing and recurrences were collected.
Healing was defined as closure of the fistula track documented by means of MRI scan. Recurrence was defined as purulent or mucous discharge from the fistulas after initial healing.

Fig. 1: The patient in the picture is a 34-year-old lady receiving surgery for idiopathic recurrent fistula-in-ano. The procedure was performed in prone jack-knife position. This position allows prevention and easier control of major bleeding.

Fig. 2: Same patient of Picture 1. A loose-seton was placed in a track at 6 o'clock, to protect the sphincters (thick arrow). Two wide fistulotomies were performed at 3 and 9 o'clock. Packing was performed and loose non-absorbable stiches (narrow arrow) were placed. Gauzes used for packing the perineal defects are showed by the white arrow.

## Results

Eight patients (3 males, mean age 38 ± 15 years) fit to study criteria were enrolled. Four patients had CD, two had *HS*, and two had idiopathic fistula-in-ano. No perioperative complications were observed. Two patients were required to stay overnight, because of EUA being carried out in the afternoon.

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Fig. 3: The patient in the picture is a 69-year-old man receiving surgery for complex perianal recurrent Crohn's disease. The procedure was performed in lithotomic position. A wide perineal incision was made on the left. It was packed and some loose non-absorbable stitches were placed.

Gauzes were removed on postoperative day two, in outpatient settings. One patient had bleeding at removal, requiring coagulation with electro-scalpel. No further surgery or anaesthesia were needed. One patient needed to receive major analgesics, while four wore pads because of the serous discharge in the postoperative period. No perineal sepsis was observed.
Mean time to healing was 21.5 ± 3.2 days; mean time off-work was 2 ± 1.3 days. Patients reported no significant impairment of leisure activities.

Table I depicts patients characteristics and outcome of treatment. At a mean follow-up of 16.4 ± 2.1 months no recurrences were observed at MRI scan, irrespective of baseline disease. Major complications were not observed.

## Discussion and Comments

Most cases of fistula-in-ano are due to anal crypt infections extending to the surrounding planes [1-8]. Some conditions and diseases may predispose to different fistulas, arising with different pathophysiology (i.e. CD [1,3-6], immunodepression and AIDS [1,3-8]). When dealing with perianal fistulas, complete drainage and avoidance of partial removal or persistence of granulation tissue are pivotal [11]. Complex perianal fistulas and those associated with extensive perineal involvement may be difficult to treat, often requiring multimodal approaches [3,4,6,11,12]. This is particularly true in CD [12], when severe perianal/perineal disease is usually caused by a severe rectal disease, which may even require proctectomy or salvage treatment with biologic drugs [4,6]. We ruled out CD patients presenting with a concomitant rectal involvement requiring major surgery (i.e. diverting stoma; proctectomy). We also excluded patients with significant medical co-morbidities (i.e. diabetes) as these may be associated with higher complication rates after surgery, leading to a potential selection bias [13].
Wide perineal incisions are needed when infection has spread to the subcutaneous spaces of the perineum. Concerning perianal component, authors favoured to drain the abscess only, discouraging concomitant fistulotomy in acute settings [2,14-16]. Though considering that a recent report found to be useful combining the treatments in carefully selected patients [17], we agree with the former, as the anatomy of the sphincters at the time of abscess drainage could be difficult to define in the majority of patients, potentially leading to inadvertent sphincter lesions ultimately resulting in continence impairment. A staged approach would seem more prudent.

Table I - *Patients characteristics and surgical details*

| Pt | Gender | Age yr | Diagnosis | Previous treatments | Time to healing, d | Complications | Time off work d |
|---|---|---|---|---|---|---|---|
| 1 | M | 28 | CD | None | 21 | None | 1 |
| 2 | M | 69 | CD | Abscess drainage; Fistulotomy | 23 | None | 1 |
| 3 | M | 44 | IF | None | 19 | None | 2 |
| 4 | F | 46 | HS | Loose setons placement | 19 | Bleeding | 5 |
| 5 | F | 27 | CD | "Core out" fistulectomy | 20 | None | 1 |
| 6 | F | 31 | IF | Loose setons placement | 29 | None | 2 |
| 7 | F | 34 | HS | Loose setons placement | 21 | None | 1 |
| 8 | F | 27 | CD | Loose setons placement | 19 | None | 3 |

*Pt: patient; yr: years; d: days; M: male; F: female; CD: Crohn's disease; IF: idiopathic fistula-in-ano; HS: Hidradenitis suppurativa.*

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When dealing with chronic tracks involving the soft-tissues, fistulotomy and lay-open is a safe and effective option. However, large defects often cause intraoperative bleeding which may be hard to control. We would hence recommend to avoid further manoeuvres to control bleeding – which is needed for healing – placing a perineal packing on the wound bed. Only one patient had bleeding, at gauzes removal, but it was easily controlled in the ambulatory.

Postoperative discomforts are common with perineal incisions requiring packing, and are mainly represented by pain due to dressing change and gauzes pressed in the wound, and difficulties in sitting. These may affect time-off work and social activities. In order to avoid continued painful medications Abrahams et al. [14] suggested that primary closure could be an option reporting a 78% primary healing rate in soft-tissue abscesses. However, the *rationale* of wound dressing is to provide surgical haemostasis and then to prevent skin closure, allowing healing by secondary intention and preventing further abscess or fistula formation. Primary closure may bring about higher risk of bleeding and septic complications, although removing nuisances due to painful medications in case of success. With our modified pathway of perineal packing, we were able to combine these benefits: first, packing at surgery removed after 48 hours eliminates the risk of bleeding until gauzes removal, allowing a curative surgical approach with adequate drainage and exposure; second, the risk of bleeding at removal is acceptable (14.2%), but the procedure should be performed by the surgical team in safe settings; third, adequate lay-open allows avoiding further packing, with only one patient requiring analgesics.

Time to heal was within the ranges of secondary intention wound healing. Furthermore, irrespective of baseline diseases, all patients achieved clinical healing of the perineal wound documented by MRI scan, and concomitant healing of fistula-in-ano. They all reported a prompt return to everyday activities, even if serous discharge from the wound caused a slight discomfort.

## Conclusions

Our pathway of perineal packing is safe and effective for the management of wide fistulating tracks of the perineum. It can be safely carried out at the time of surgery for fistula-in-ano. Irrespective of baseline disease outcomes are excellent in selected patients.

A prompt return to work and leisure activities is observed, suggesting the cost effectiveness due to avoidance of repeated painful medications at the hospital, analgesic consumption, time off work and further surgery.

Nuisances are acceptable and patients satisfaction is high.


## Riassunto

INTRODUZIONE: Le fistole perianali con estesa componente perineale richiedono spesso la messa a piatto dei tramiti perineali, con conseguente difficoltà di controllare il sanguinamento perioperatorio. Il posizionamento di garze in tali difetti è utile a tale scopo, ma le successive medicazioni possono essere dolorose.

OBIETTIVI: Viene presentata una modifica della gestione del *packing* perineale, in grado di evitare ulteriori procedure anestesiologiche e chirurgiche, riducendo il dolore legato alle medicazioni postoperatorie.

MATERIALI E METODI: Abbiamo considerato per l'inclusione nello studio tutti i pazienti osservati dal mese di gennaio 2010 al mese di dicembre 2012 con fistole perianali con esteso coinvolgimento dei tessuti perineali. Abbiamo escluso pazienti con diagnosi di malattia di Crohn (MC) attiva ed i pazienti diabetici. La MC è stata definita attiva in caso di Crohn's disease activity index (CDAI) >150, in caso di sintomi da occlusione e di concomitante proctite richiedente trattamento. Tutti i pazienti sono stati sottoposti ad esame obiettivo, rettosigmoidoscopia, RM pelvi-perineale. Successivamente è stata eseguita una esplorazione chirurgica sotto anestesia (ESA) in camera operatoria, condotta in anestesia generale. Al termine della procedura, la componente perineale è stata messa a piatto con *curettage* del fondo, effettuando un *packing* perineale con garze sterili. Sono stati apposti punti di sutura non riassorbibili per evitare il *displacement* delle garze e per effettuare compressione. Tutti i pazienti hanno ricevuto profilassi antibiotica, continuata alla dimissione per 6 giorni. La dimissione è stata effettuata entro la prima giornata postoperatoria. Le garze sono state rimosse da un chirurgo in ambulatorio in seconda giornata postoperatoria, coprendo la ferita con medicazioni sterili, evitando zaffi. I pazienti sono stati istruiti ad eseguire autonomamente la medicazione al domicilio, e sono stati visitati una volta a settimana fino alla guarigione. La guarigione è stata definita come chiusura del tramite fistoloso documentata con esame RM pelvi-perineale.

Sono stati raccolti dati relativi a: caratteristiche di base del paziente e della patologia; tempo di degenza; complicanze; tempo necessario alla guarigione; necessità di ulteriori procedure e di farmaci antidolorifici; ritorno all'attività lavorativa; recidiva.

RISULTATI: Otto pazienti sono stati inclusi (3 maschi, età media 38 ± 5.1 anni). Quattro pazienti avevano MC, due Idrosadenite suppurativa e due fistola anale criptoghiandolare. Tutti sono stati dimessi in giornata, ad eccezione di due pazienti dimessi il giorno successivo, in quanto la procedura di ESA era stata effettuata nel pomeriggio. Alla rimozione del *packing* in seconda giornata, un paziente (14.2%) ha avuto sanguinamento con necessità di coagulazione mediante elettrobisturi. Solo un paziente riferiva necessità di assumere antidolorifici maggiori, mentre quattro riferivano di aver indossato pan-


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nolini a causa del *discharge* siero-ematico. No è stato osservato alcun caso di suppurazione. La guarigione è avvenuta dopo una media di 21.5 ± 3.2 giorni; il tempo medio di riposo dal lavoro è stato di 2 ± 1.3 giorni. Nessuna limitazione delle attività di svago è stata osservata. Ad un follow-up medio di 16.4 ± 2.1 giorni, non sono state osservate recidive, né complicanze maggiori.

DISCUSSIONE: In tutti i pazienti è stato possibile ottenere guarigione completa dei tramiti perineali, senza rilevanti alterazioni delle relazioni sociali o necessità di ulteriori trattamenti. I pazienti sono stati dimessi in sicurezza, con rapido ritorno al lavoro ed alle proprie attività quotidiane.

CONCLUSIONI: I nostri dati suggeriscono che tale procedura sia sicura ed efficace in pazienti selezionati con estesa componente perineale. Tale gestione potrebbe risultare vantaggiosa in termini di spesa Sanitaria, in quanto tutti i pazienti sono stati in grado di tornare al lavoro in tempi rapidi, evitando ripetute medicazioni dolorose presso la Struttura Ospedaliera, consumo di analgesici maggiori, tempo lontano dal lavoro ed ulteriori procedure chirurgiche.

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