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Review article

Acquired Recto-Uretral Fistulas: Etiopathogenesis, Diagnosis and Therapeutic Options☆

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ABSTRACT

Rectouretral fistulas are a rare disease, but represent an important problem for the patient that suffers them and a challenge for the urologist and colorectal surgeon who has to manage them.

A wide review has been performed focusing on etiopathogenic factors, diagnostic and therapeutic options including the analysis of different surgical techniques. PubMed, MEDLINE and EMBASE medical database were searched up to September 2014.

Fístulas recto-uretrales adquiridas: etiopatogenia, diagnóstico y opciones terapéuticas

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RESUMEN

Las fístulas recto-uretrales constituyen una rara entidad, pero representan un problema trascendental para el sujeto que la padece y un reto para el urólogo y/o coloproctólogo que debe resolverlo.

Se realiza en este trabajo una amplia revisión sobre los factores etiopatogénicos, procedimientos diagnósticos y actitud terapéutica, analizando las diferentes opciones quirúrgicas descritas en la literatura, mediante búsqueda bibliográfica en PubMed, MEDLINE y EMBASE hasta septiembre de 2014.

Introduction

Rectourethral fistulas (RUFs) are a rare disease, but represent an important problem for the patient who suffers them and a challenge for the urologist and/or coloproctologist who has to manage them.

The published series are short; the largest ones comprise two or three dozen cases seen over long periods of time. This circumstance has limited the availability of a large number of

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therapeutic options, the choice of which is based on the preference or greater experience of the respective surgeon. In recent years, however, there has been a greater trend towards streamlining treatment based on the aetiopathogenesis, type of fistula and degree of injury.

Now, despite its rarity and the technical difficulties for treatment approach, highlighted by all the authors (most papers describe it as a devastating pathology), healing figures are close to 100% with various therapeutic procedures, either with only one intervention or after several attempts.

This paper discusses the clinical aspects of this exceptional disease, as well as the main therapeutic options.

Method

A bibliographic search was conducted in PubMed, MEDLINE and EMBASE up to September 2014, in Spanish and English, using the key word ''rectourethral fistulas''. Every article deemed important was evaluated with a special focus on the aetiopathogenesis, diagnostic methodology and therapeutic options. The highlighted articles mentioned in the previous search were also reviewed.

Aetiopathogenesis

Although congenital fistulas do exist, mainly associated with anorectal malformations, in this analysis we consider acquired rectourethral fistulas exclusively.

The causes are highly variable, but the vast majority are related to prostate cancer, either due to tumour invasion or, more frequently, as a consequence of its treatment; rectourethral fistulas are estimated to occur in around 1%–2% of all patients treated for prostate cancer.[1–4]

It is certainly interesting to analyse disease progression with respect to its exact cause and in relation to the incorporation of modern technologies, not only from a surgical perspective with the application of laparoscopic and robotic[5–12] surgery, but also due to the arrival of new therapeutic options, such as external radiotherapy, brachytherapy, cryotherapy, high-intensity ultrasound and radiofrequency, mainly.[13–26]

Also of utmost importance is the spectacular increment of RUFs in relation to external radiotherapy and brachytherapy in recent years. In this sense, Lane[27] underscores that, out of 315 cases of RUF collected until 1997, only 12 (3.8%) had received pelvic radiotherapy, whereas, since 1998, 113 of the 228 published cases (49.6%) had received that treatment. Still, as explained by this author, not all fistulas can be exclusively attributed to radiotherapy, since many of these patients had undergone some kind of surgery, instrumental manipulation and biopsies, and all these factors could have contributed to the fistulas being triggered, a situation stressed by other authors.[28–30] Other circumstances, such as nutritional status, immunodepression, smoking and older age have also been implied, although definitive conclusions could not be drawn.[30,31]

The frequency of RUF occurrence in association with these factors varies in different series: it develops in 0.53%–9% after radical prostatectomy[1,32]; 0.4%–8.8% after brachytherapy[28,29,33,34]; 0%–6% after external radiotherapy[30]; 0.4%–3% after cryotherapy[23,25,35] and 2.2% after high-intensity ultrasound.[16]

The time of onset of the fistula ranges between four and seven days following a radical prostatectomy[36]; between four and seven weeks after cryotherapy or ultrasound and up to three years following the administration of brachytherapy.[28–30,34]

Genitourinary traumas are less frequent, but undoubtedly important; for example, pelvic fractures, war wounds, transrectal biopsies and some very anecdotal traumas, such as those resulting from enema cannulas or haemorrhoid sclerosing injections,[13,36–38] as well as pelvic inflammatory or infectious processes, such as Crohn's disease, recurrent anal abscesses and tuberculosis. The occurrence of a RUF due to invasive rectal cancer, although possible, is exceptional.

Diagnosis

The diagnosis is made based on symptoms and appropriate diagnostic tests.

The primary symptoms are the presence of pneumaturia and/or faecaluria and the passage of urine through the anus. The possibility of urinary infections is permanent.

In variable proportions, haematuria and perianal or perirectal pain may be added; occasionally, a rectal examination may allow the location or suspicion of the existence of the fistulous orifice.[28,30,39,40]

Diagnostic tests are intended to confirm the presence of the rectourethral communication and its location and to rule out the presence of a superimposed disease.

The most often proposed studies are rectoscopy, cystoscopy, urethroscopy and cystourethrography, with different authors recommending them.[20,22,24,41]

Performing a contrast enema, CT, MRI and endorectal ultrasound may provide data in selected cases, especially to rule out abscesses or tumour infiltration. There are some anecdotal cases on the finding of a RUF after performing a PET-CT scan.[42]

All these diagnostic tests provide the most complete evaluation of the fistula and allow choosing the most adequate treatment.

Treatment

Taking into account its low incidence, its wide pathological variability and its aetiopathogenic characteristics, as well as each patient's different circumstances, it is easy to understand the lack of a methodical guide for a generalised therapeutic plan. Consequently, most of the time the course of action provided is based on the habits and experience of the medical team in charge; there are no available data comparing progression and outcomes according to the procedure used. In general, the choice is based on the time when the fistula is detected (during surgery or post-surgery), clinical symptoms, aetiology, associated pathological abnormalities, urinary and faecal functions, age, life expectancy and overall condition of the patient.[4,20–22,25,27,31,32,43,44]