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## ANAL FISSURE IN CHILDREN

### Abstract

*In this paper Authors evaluate data of their experience about children affected by anal rhagades and compare the results to a previous study performed on adults patients.*

*They illustrate their protocol of treatment after an analysis about physiopathological aspects of anal fissure in pediatric age.*

### Key words:

*Anal fissure, proctology.*

Anal fissure is a common disease of the anal canal which is characterised by anal pain, stipsis, pruritus, tenesmus and proctorrhagia. Disease's incidence in children is as high as in adults. However the cause and pathogenesis of this condition may be different in children from that reported in the adults. As consequence of this the treatment of choice may differ between the two groups.

We review in this paper our general experience with anal fissure in children. Additionally we compared the results of this study with those reported previously in another study conducted on adults with the intention to determine the physiopathologic characteristic of this condition and its modalities of treatment.

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### Study population

This study included 30 children (19 female, mean age 4.2 years (range: 18 months-9 years)) with anal fissure. All children underwent a careful proctologic visit with anoscopy in order to exclude other associated ano-rectal disease.

Anal fissure was present in the medial-posterior aspect of the anal canal in 24 patients and in the medial-anterior aspect in 2. In 4 case multiple anal fissures were present.

Symptoms are shown in table 1. Stipsis was the most common symptom recorded and was observed in all children.

Table 2 shows the data of 117 adult patients with anal fissure published previously in another study.

The results of the two groups were compared. In particular we found that the incidence of stipsis, pruritus and tenesmus was similar between the two groups. Anal serous discharge was not assessed properly in children as 18 (10 female) of whom were still

wearing the nappy. However the incidence of proctorrhagia was higher in adults. Significantly stipsis was present with a higher incidence in children than in adults (100% vs 77%). In few adult cases anal fissure was associated with diarrhoea.

Initially the treatment of choice for children was always conservative. We first tried to solve the stipsis with laxatives and a diet rich in fibres. In few cases in smaller children we advised the use of olive oil just before defecation. In other cases we found useful the application of an anaesthetic cream to decrease the severity of the pain.

Symptoms disappeared completely in children after 5-10 days of conservative treatment and anal fissures healed after 10-15 days. The treatment was anyway continued for several weeks after the anal fissures were healed. None of the children received surgical treatment for this condition. On the contrary all adults underwent lateroshynterectomy which was successful in 80% of cases.

**Table 1 - Presentig symptoms of anal fissure in 30 children.**

SYMPTOMS	No.Pts	%
- pain during or after defecation	28	93.3
- rectal bleedig	20	66.6
- costipation	30	100
- anal itching	11	36.6
- tenesmus	9	30

**Table 2 - presenting symptoms of anal fissure in 117 patients.**

SYMPTOMS	No.Pts	%
- pain during or after defecation	113	96.6
- rectal bleedig	94	80.3
- costipation	90	76.9
- anal itching	40	34.2
- tenesmus	38	32.5

### Discussion

The anal canal has a relatively weak area in the medial-posterior aspect of the internal sphincter due to the its angle, its relative posterior fixety and the elliptic form of the superficial part of the external sphincter. This is the area where commonly idiopatic anal fissures arise in males. This "locus minor resistentiae" is called Brick's space.

On the other hand in females there is a weak zone at the level of the anterior commissure among the vulva, the vagina and the tendineous center of the perineum. This explains why anterior anal fissure is found almost exclusively in females.

Initially anal fissure presents itself as triangular mucosal ulcer localized between the anal border and the denate line. White muscular fibres of the internal sphincter are successively exposed.

Several theories have been evaluated to explain the onset of anal fissure:

Infectious theory: the fissure originates from an infection of Morgagni's cripts;

Vascular theory: the fissure arises from an area of deficent haematic perfusion;

Meccanical theory: the fissure is a consequence of repeted traumas due to the passage of excessively hard and voluminos faeces.

Recently, also the role of the hypertone of the sphincter has been made clear: it creates areas of chronic ischemia (vascular theory) and reduces the elastic response of the anus to the passage of faeces, thus enhancing their traumatic effect.

The hypertone then, is not just a consequence of a reflex contraction caused by pain during the passage of faecal material on the fissure but it is also a cause for the onset of the disease itself. Moreover the presence of a hypertone retards or impedes the healing of the lesion. The therapeutic value of sphincterotomy is based on these

considerations. Sphincterotomy consists of a bridge interruption of the internal sphincter (about 2/3) either on the medial posterior line (medial posterior sphincterotomy) or laterally (Parks' lateral sphincterotomy). The interruption of the sphincter leads to immediate disappearance of pain and healing of the fissure.

This procedure is effective in 97% of pts and it is nowadays considered the most resolute treatment in adults. Nonetheless, it can't be indicated for paediatric patients if not in exceptional cases.

Sphincterial hypertone does not have the same importance in the onset on the paediatric fissures as it does in the adult. This is evident in comparing the data reported in the tables. In children stipsis is present with a percentage of 100%, while in adult it amounts to only 76.9% of cases. Moreover diarrhoea has been evidenced in 12 adult patients. As it is known, diarrhoea causes an increase of the tone of the sphincter. Thus explaining the high incidence of fissures in patients with colitis.

It is possible to hypothesise that anal fissure in children as an exclusive consequence of the trauma induced by too voluminous or hard faeces.

For this reason we have, in accord with what is reported by literature, to adopt a conservative therapy based on a local treatment and on making the evacuation process regular, always obtaining the disappearance of the pain and the healing of the fissure.

According to this results we then consider not useful to perform surgical treatment on the internal anal sphincter. In children, in fact, this muscular structure is particularly delicate since it is still growing. Is then impossible to perform a perfectly calibrated sphincterotomy without risking severe damage that may compromise continence during adulthood.

### Italian abstract

Gli Autori valutano i dati della casistica su bambini affetti da ragade anale comparandoli con i risultati di un precedente studio condotto su adulti che presentavano la stessa patologia.

Dopo aver individuato le caratteristiche fisiopatologiche della ragade anale in età pediatrica vengono considerate le modalità di trattamento.

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