

Towards Information Retrieval Evaluation with Reduced and Only Positive Judgements

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Stapled hemorrhoidectomy in the treatment of hemorrhoidal prolapse.
Am J Clin Oncol. 2004 Nov;26(11):659-6. doi: 10.1200/JCO.2003.09.4645.
Abstract
 In the treatment of hemorrhoidal prolapse, stapled hemorrhoidectomy according to the Longo's technique, represents an innovative and interesting procedure. The Authors consider own experience in the years 2001-2002, analyzing preliminary results in the treatment of 55 patients affected by hemorrhoidal disease classified as III-IV grade, associated with mucosal prolapse, rectosigmoid in 5 cases, anal fissures in 6 and hypertrophic papillae in 1. The patients were submitted to mucosal prolapsectomy with mechanical stapler (PPH) or 1/2 Ethcon, applying hemorrhoidal stapler on a rubber band, and then to rubber band ligation, associated to stapled anal sphincterotomy in 5 cases, and resection of anal hypertrophic papillae in 1. In 5 cases of rectosigmoide a Burz's suture was associated to a stapled transanal rectal retractor (STAR). After 3 and 12 months the Authors performed ano-rectography, anal manometry and defecography. Mean operative time was 45 minutes (range 20'-120') and mean hospital stay was 3 days (range 2-6 days). In the early postoperative course urinary retention in 4 cases, treated with temporary catheterization (3) and pain relief for 72 hours in 1, was observed. Only 1 patient, was reoperated in day surgery and with loco-regional anesthesia for residual fibrous hemorrhoid. Bleeding, severe pain, anal stenosis, impairment of continence were not observed. According to the Literature data, our experience confirm that mucosoproctectomy represents an innovative, safe, simple and effective operation in the treatment of hemorrhoidal disease. In case of mucosoproctectomy associated to external fibrous hemorrhoids, a combined surgical treatment is requested in order to achieve better results.



Problem

- Systematic reviews of medical queries (e.g. *best treatment for asthma*) require IR over the medical literature.
- Manually crafted systematic reviews provide some relevant documents, but only the most representative.
- By improving IR evaluation for systematic reviews, we can develop more robust systems, and provide tools for clinicians to navigate the literature.

Which treatments work best for hemorrhoids?

Evidence-based answer
 Excision is the most effective treatment for thrombosed external hemorrhoids (strength of recommendation (SOR): B, retrospective studies). For prolapsed internal hemorrhoids, the best definitive treatment is traditional hemorrhoidectomy (SOR: A, systematic reviews). Of nonoperative techniques, rubber band ligation produces the lowest rate of recurrence (SOR: A, systematic reviews).

Evidence summary
 External hemorrhoids originate below the dentate line and become acutely painful with thrombosis. They can cause perianal pruritus and excoriation because of interference with perianal hygiene. Internal hemorrhoids become symptomatic when they bleed or prolapse (TABLE).

For thrombosed external hemorrhoids, surgery works best
 Few studies have evaluated the best treatment for thrombosed external hemorrhoids. A retrospective study of 231 patients treated conservatively or surgically found that the 48.5% of patients treated surgically had a lower recurrence rate than the conservative group (number needed to treat [NNT]=2 for recurrence at mean follow-up of 7.6 months) and earlier resolution of symptoms (average 3.9 days compared with 24 days for conservative treatment).
 Another retrospective analysis of 340 patients who underwent outpatient excision of thrombosed external hemorrhoids under local anesthesia showed a higher recurrence rate at 1 year with stapled hemorrhoidectomy than with conventional surgery.¹

Nonoperative techniques? Consider rubber band ligation
 A systematic review of 3 poor-quality trials comparing rubber band ligation with excisional hemorrhoidectomy in patients with grade III hemorrhoids found that excisional hemorrhoidectomy produced better long-term symptom control but more immediate postoperative complications of anal stenosis and hemorrhage.² Rubber band ligation had the lowest recurrence rate at 12 months compared with the other nonoperative techniques of sclerotherapy and infrared coagulation.³

Fiber supplements help relieve symptoms
 A Cochrane systematic review of 7 RCTs enrolling a total of 378 patients with grade I to III hemorrhoids evaluated the effect of fiber supplements on pain, itching, and bleeding. Persistent hemorrhoid symptoms decreased by 53% in the group receiving fiber.⁴

When surgical hemorrhoidectomy is recommended
 The American Society of Colon and Rectal Surgeons recommends adequate fluid and fiber intake for all patients with symptomatic hemorrhoids. For grade I to III hemorrhoids, the society states that banding is usually most effective. When office treatments fail, the society recommends surgical hemorrhoidectomy (SOR: B).
 The society recommends excision of thrombosed hemorrhoids less than 72 hours old and expectant treatment with

hemorrhoids that present early. Surgical hemorrhoidectomy should be reserved for when conservative treatment fails and for patients with symptomatic grade III and IV hemorrhoids.^{1,5}

- Classification of symptomatic internal hemorrhoid**
- | GRADE | DESCRIPTION |
|-------|--|
| I | Hemorrhoids do not protrude |
| II | Hemorrhoids protrude with reduce spontaneously |
| III | Hemorrhoids protrude and by hand |
| IV | Hemorrhoids are permanent |
- Source: Madsf RD, et al. Gastroenterology 2004.⁶
- References**
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(Sample from the clinical Inquiries column of the Journal of Family Practice)

General approach

- System to improve IR evaluation when only a reduced set of relevant documents is known.
- Automatic expansion of the relevance set by relying on similarity functions.
- Evaluation by measuring correlation among IR system rankings
- 63 medical queries from the OHSUMED collection, 16 ranking algorithms from the Terrier package

Distance and Relevance

- Measure distance with the relevant documents
- Distance measured using cosine similarity, and term vectors with tfidf, and compressed with PCA
- High correlation for the most similar

Pseudo-qrels for evaluation

- Given a query and existing qrels, obtain pool of documents from the IR systems (N), and consider the top K as pseudo-relevant
- Measure tau correlation over IR systems for different percentages of original qrels
- Improved correlation when original qrels in range 20-40%

