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Original Article

Retained or expelled staples after transanal stapled surgery: this is the problem!

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ABSTRACT

Study objective: The aim is to assess the presence and persistence of the agraphes at the level of staple line after transanal stapled surgery.

Methods: From April to December 2016 one-hundred-thirteen patients with variable follow-up (6 months–10 years) were randomly selected among all the patients undergone transanal stapled surgery for haemorrhoidal disease or functional disorders such as obstructed defecation syndrome. Only 87 patients agreed to participate this study. All the patients underwent digital exploration, anoscopy and 360° tridimensional transanal ultrasound.

Main results: Different types of stapled transanal surgical procedures were performed: 48 transanal rectal resection with high volume device, 24 stapled haemorrhoidopexy, 8 Double Stapled Haemorrhoidopexy, 7 Transtarr. In 41.4% the staple line was not identified with digital examination or anoscopy and 17.2% of patients have some staples partially expelled inside the lumen. 360° tridimensional transanal ultrasound showed a complete staple line at the ano-rectal junction which appears as an interrupted hyperechoic circular layer.

Conclusion: The staples after stapled transanal surgery remain at the level of the staple line independently from the device used by the surgeon leading to the necessity of a shared and adequate language, in fact the shed staples need to be considered as expelled instead of retained.

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Grampos retidos ou expelidos em seguida à cirurgia transanal com grameador: eis aí o problema!

RESUMO

Objetivo do estudo: Avaliar a presença e persistência dos agrafes ao nível da linha de aplicação dos grampos, em seguida à cirurgia transanal com grameador.

Métodos: De abril até dezembro de 2016, 113 pacientes com seguimentos variáveis (6 meses–10 anos) foram aleatoriamente selecionados entre todos os pacientes tratados com cirurgia

Palavras-chave:

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STARR
ODS
Grampos

transanal com grampos para tratamento de hemorroidas ou de transtornos funcionais, por exemplo, síndrome de evacuação obstruída. Apenas 87 pacientes concordaram em participar do estudo. Todos os pacientes passaram por exploração digital, anoscopia e ultrassonografia transanal tridimensional de 360°.

Resultados principais: Foram realizados diferentes tipos de procedimentos cirúrgicos transanais com grampeador: 48 ressecções retais transanais com uso de grampeador de grande volume, 24 hemorroidopexias com grampeador, 8 hemorroidopexias com grampos duplos e 7 procedimentos com grampeador Transtar. Em 41,4% dos tratamentos, não foi possível identificar a linha de grampeamento com exame digital ou com anoscopia, e em 17,2% dos pacientes alguns grampos foram expelidos para o lúmen. A ultrassonografia transanal tridimensional de 360° revelou uma linha de grampeamento completo na junção anorretal, assumindo o aspecto de uma camada circular hiperecoica interrompida.

Conclusão: Em seguida à cirurgia transanal com grampeamento, os grampos permanecem ao nível da linha de grampeamento, independentemente do tipo de grampeador usado pelo cirurgião, o que torna necessária uma linguagem compartilhada e adequada; de fato, os grampos soltos devem ser considerados como expelidos, em lugar de retidos.

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Introduction

Mechanical stapler is one of the greatest surgical innovation of the last century. It allows to perform quick and easy procedures resulting safe and effective. The pioneer of stapler procedures with his prototype weighted 3.6 kg was Húmer Hült also known as the “father of surgical stapling” in 1908. The technological development passed through several countries and lots of different devices, firstly used for blood vessels and then applied to the bowel too.¹⁻⁵ From the initial application in the abdominal open surgery the technology followed the trend of continuous surgical improvement maintaining the same standard levels also in the new laparoscopic approach and it always led to new devices. Stapled surgery for the treatment of haemorrhoidal prolapse, the so-called stapled haemorrhoidopexy (SH), was firstly described by Longo in 1998 as a less painful alternative to the conventional haemorrhoidectomy.⁶ Since that moment, there were lots of technological changes, some of them are clearly visible such as the shape and ergonomics while others are less evident but fundamental to improve device performance. A common element to all the different type of stapler is the use of non-magnetic, inert metal staples which may guarantee a long lasting. Lots of study were performed to assess metals properties and they conclude that the best choice is titanium or titanium alloy⁷ rather than stainless steel which was used at first. Although it may seem fairly clear the fate of the staples after bowel anastomosis, the surgeons are often not well-informed about this and they use inaccurate terms causing lot of confusion about the procedure, its effects and the possible postoperative complications. The aim of the present study is to assess the presence and persistence of the agraphes at the level of staple line after transanal stapled surgery.

Methods

From April 2016 to December 2016 one-hundred-thirteen patients with variable follow-up (range: 6 months–10 years)

were randomly selected among all the patients undergone transanal stapled surgery for haemorrhoidal disease or functional disorders such as obstructed defecation syndrome (ODS). They were retrospectively collected through clinical records and then telephone called for an outpatient evaluation. Only 87 patients agreed to undergo this further follow-up not scheduled. All the patients underwent physical examination through digital exploration, anoscopy and 360° tridimensional transanal ultrasound. The evaluation was performed by two experienced surgeons specialized in colorectal and proctological surgery.

Results

Eighty-seven patients (48 M – 39 F) underwent stapled surgery. Different types of surgical procedures were performed and they were divided as follows: 48 transanal rectal resection with high volume device such as TST STARR+ 36, 24 stapled haemorrhoidopexy (SH) with single PPH device, 8 Double Stapled Haemorrhoidopexy (DSH) with two PPH device, 7 Transtarr with Contour CCS-30. Patients' follow-up before this outpatient evaluation ranged from 6 months to 10 years and it is distributed as follows: 12 patients (12 TST STARR+ 36) at 6 months, 26 patients (26 TST STARR+ 36) at 1 year, 11 (10 TST STARR+ 36, 1 DSH) patients at 3 years, 11 patients (7 DSH, 4 CCS-30) at 5 years, 9 patients (6 PPH, 3 CCS-30) at 7 years and 18 patients (18 SH) at 10 years. In thirty-six patients (41.4%) the staple line was not identified with digital examination or anoscopy. Fifteen patients (17.2%), 13 of them within the first year follow-up, have some staples partially expelled inside the lumen at the level of the staple line identified through both digital exploration and anoscopy (Fig. 1). In nine (10.3%) patients there are little granulomas above partially expelled staples causing sporadic bleeding. 360° tridimensional transanal ultrasound showed in all the patients the presence of an interrupted hyperechoic circular layer at the upper edge of the pubo-rectalis muscle, resulting in a complete staple line at the ano-rectal junction (Fig. 2).

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