



# Journal of Coloproctology

www.jcol.org.br



## Technical Note

# A novel four quadrant laser sphincterotomy for idiopathic severe anal stenosis

Ashwin Porwal\*, Paresh Gandhi, Deepak Kulkarni

Healing Hands Clinic, Pune, India

### ARTICLE INFO

#### Article history:

Received 9 July 2017

Accepted 3 September 2017

Available online xxx

#### Keywords:

Anal stenosis

Anoderm

Laser sphincterotomy

Anal stricture

Anal canal surgery

### ABSTRACT

Anal stricture or stenosis, though uncommon, is disabling condition. It affects the quality of life due to pain, bleeding and difficulty in defecation, incontinence or increased frequency. It occurs when the normally pliable anoderm is replaced with fibrotic connective tissue, leading to an abnormally tight and inelastic anal canal. Mostly it occurs secondary to trauma, iatrogeny, inflammatory diseases, radiation or neoplasia. The treatment of anal stricture is generally considered to be difficult and various methods of treatment have been suggested. It is often unresponsive to conservative medical management. The surgical procedures such as dilatations and anoplasty are associated with significant complications which make it a difficult treatment challenge. Several good treatment options are available currently. Through this case, we report and explore a new medical treatment for anal strictures with four quadrant laser sphincterotomy.

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### Nova esfínterectomia a laser nos quatro quadrantes para estenose anal idiopática grave

### RESUMO

A estritura ou estenose anal, embora incomum, é problema incapacitante. Essa condição afeta a qualidade de vida por causa da dor, do sangramento e da dificuldade de defecação, de incontinência ou aumento da frequência. A estenose anal ocorre quando o anoderma, normalmente flexível, foi substituído por tecido conjuntivo fibrótico, e o resultado é um canal anal anormalmente estenosado e inelástico. Na maioria dos casos, a estenose anal ocorre secundariamente a trauma, por causa iatrogênica, por doença inflamatória, radiação ou neoplasia. Em geral, se considera que o tratamento dessa condição é tarefa difícil, tendo sido sugeridos diversos métodos de tratamento. Com frequência a estenose anal não responde ao tratamento clínico conservador. Procedimentos cirúrgicos como as dilatações

#### Palavras-chave:

Estenose anal

Anoderma

Esfínterectomia a laser

Estritura anal

Cirurgia de canal anal

\* Corresponding author.

E-mail: [drashwinporwal@healinghandsclinic.co.in](mailto:drashwinporwal@healinghandsclinic.co.in) (A. Porwal).

<https://doi.org/10.1016/j.jcol.2017.09.419>

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ou a anoplastia estão associados a complicações significativas, implicando difícil desafio terapêutico. Atualmente, o cirurgião conta com várias opções terapêuticas satisfatórias. No presente caso, relatamos e exploramos um novo tratamento clínico para estenoses anais, por meio da esfínterectomia a laser nos quatro quadrantes.

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## Introduction

Anal stenosis occurs when the normally pliable anoderm is replaced with fibrotic connective tissue, leading to an abnormally tight and inelastic anal canal. Benign anal stenosis is an uncommon, disabling and incapacitating disease. Anal stenosis occurs most commonly following any anorectal surgical procedure.<sup>1</sup> Stenosis produces a morphologic alteration of the anal canal and a consequent reduction of the region's functionality, leading to difficult or painful bowel movements.<sup>2,3</sup> Treatment, both medical and surgical, should be modulated based on stenosis severity.<sup>3,4</sup> Several research studies have been conducted on treatment of anal stenosis, but there is no universal consensus on single anoplasty procedure.<sup>3</sup>

## Case report

A 55 year-old male patient, studied up to 12th standard and businessman by occupation, came with complains of incomplete evacuation of bowel since last 5 years. Symptoms aggravated over the past three years. Patient gave history of straining for stool, occasional burning in anal region, fragmented defecation and use of enema occasionally. Bowel habits were regular and 1–2/day. There was history of straining due to sense of incomplete evacuation. No history of manual evacuation of feces in past. No history of piles or fissure in past. No history of any operative procedure in the anal or perianal region. No history of mass per rectally. No history of decreased weight or appetite. No history of anemia, Diabetes or hypertension, HIV or any sexually transmitted disease or chronic use of any drug like antacid or painkiller. Patient was vegetarian with no specific food habits and there was no history of smoking and alcoholism or tobacco chewing.

On general physical and systemic examination, no systemic abnormalities were detected. On local examination, there was no evidence of external piles or fissure, no skin tag present, no evidence of swelling near anal region, no evidence of perianal infection or discharge, no evidence of prolapse. Digital rectal examination revealed evidence of stenosis, barely admitting tip of examining finger (Fig. 1). Proctoscopy was not possible because of stenosis. All routine blood investigations were within normal limits. The manometry showed ARD-38, AMD-131, APD-36 and AV-139, which was suggestive of mild muscular weakness.

Our patient was diagnosed as severe, diaphragmatic anal stenosis as per the Milson and Mazier classification.<sup>5</sup> Depending upon the anal canal levels, stenosis can be classified as low stenosis (distal anal canal at least 0.5 cm below the dentate



**Fig. 1 – Pre-op anal stenosis.**



**Fig. 2 – Dilated anus after four quadrant laser sphincterotomy.**

line, 65% of patients), middle (0.5 cm proximal to 0.5 cm distal to the dentate line, 18.5%), high (proximal to 0.5 cm above the dentate line, 8.5%), and diffuse (all anal canal, 6.5% of cases).<sup>3,5</sup> In our case it was low anal stenosis.

We planned a novel four quadrant laser sphincterotomy for this patient. Standard mechanical bowel preparation with water enemas was done before the operation to ensure cleansing of the distal rectal segment. Antibiotic prophylaxis was not used. A four quadrant laser sphincterotomy done at 2, 5, 8 and 11 O'clock position under all aseptic conditions, under saddle block, patient being in extended lithotomy position (Figs. 2 and 3). Gentle PR done with left index finger and 1470 nm Baretip fiber introduced at 2 O'clock in the direction of Internal Sphincter laterally. 150 joules of energy diverted at power of 8 W while moving the bare tip fiber from lateral to medial over internal sphincter. Same step followed at 5 O'clock, 8 O'clock and 11 O'clock. Total 600 joules of energy

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