

Minimal-invasive surgery for treatment of colo-rectal angiodysplasia in a child

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Summary

Introduction: Rectal angiodysplasia is a rare lesion of bowel wall in pediatric population. **Materials and Methods:** We report the first laparoscopic management of a case of bifocal angiodysplasia in a child, involving the rectum and the left colonic flexure. The preoperative investigations showed only rectal lesions. A classic Swenson's pull-through by laparoscopy was performed, with discovery of second lesion necessitating a resection of the left colonic flexure. **Result:** At day 11, the child presented an occlusive syndrome and a partial disunion of the coloanal anastomosis, requiring a discharge transverse colostomy. Two months after closure of the colostomy, the child regained 1 kg, had a normal transit (3 to 4 defecations per day) and normal haemoglobin results.

Key words: Colo-rectal; angiodysplasia; minimal-invasive surgery; venous malformations; laparoscopy; endorectal pull-through.

INTRODUCTION

Rectal angiodysplasia is a rare lesion of bowel wall in pediatric population, frequently revealed by bleeding.¹⁻⁵ Its diagnosis is difficult and made by the combination of multiple techniques.³⁻⁵ The usual treatment of colonic and rectal angiodysplasia is an open surgery, with resection of the affected zone.^{2,3} In rectal angiodysplasia, the classic technique is a Swenson pull-through with dissection of the rectum by an open abdominal surgery, also used to cure Hirschsprung's disease.³

It has been demonstrated in previous studies⁶ concerning Hirschsprung's disease that laparoscopic pull-through technique reduces complications, soiling and bleeding compared to open surgery,⁷ with earlier oral intake and discharge,⁸ but no significant difference about continence.⁹

To our knowledge, minimal-invasive surgery has not been yet described to cure angiodysplasia. This is the report of a case of rectal and colonic angiodysplasia with laparoscopic management on a young 4-year-old girl.

MATERIALS AND METHODS

A 4-year-old female infant was presented to the emergency department for massive rectal bleeding, with severe anaemia (haemoglobin at 3.4 g/dL).

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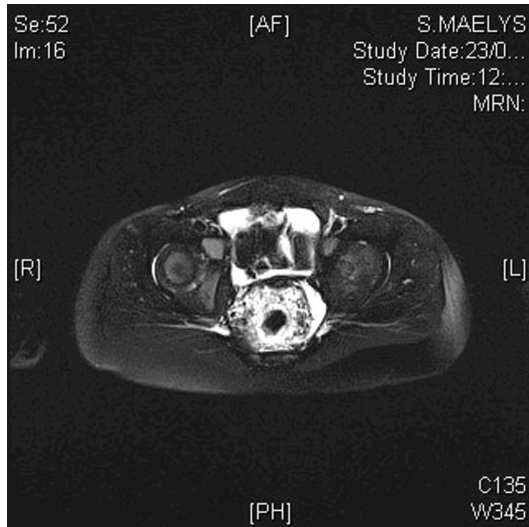


Figure 1: Pelvic MRI, T2 sequence: venous dilations in the rectal wall

The oeso-gastro-duodenal fiber endoscopy and abdominal ultrasounds were normal. The rectoscopy demonstrated an erythematous rectal mucosa,² ulcerations of the rectum and an important vascular hyperplasia. A total colonoscopy was performed and did not show the presence of any vascular dysplasia's

The pelvic magnetic resonance imaging (MRI) demonstrated capillary and venous dilations in the perirectal fat and in the rectal wall, making the diagnosis of rectal angiodysplasia (Fig. 1).

We decided a rectal surgery by Swenson's pull-through technique by laparoscopy. Four ports (three 5 mm for instrumentation and one 10 mm for telescope) were used.

The exploration of the colon revealed a 20-cm long angiodysplastic zone above the anus and, surprisingly, the same aspect on the left colonic flexure that had not been diagnosed on the preoperative tests. The rectum and the left colonic flexure were released.

A proctectomy with Swenson's pull-through (endo-rectal pull-through) technique was performed: circumferential section 2 mm above the ano-pectineal line, with trans-rectal dissection allowing moving down the colon and making a colo-anal anastomosis. The whole dysplastic zone of the rectum was removed during the intervention (Fig. 2).

After positioning two digestive clamps, a laparoscopic resection-anastomosis of the left colonic flexure was performed on the second angiodysplastic zone: intra-abdominal anastomosis (two 5/0 running sutures). The per-operative aspect seemed correct, with no traction on the colon.



Figure 2: Per-operative aspect of the rectum and the colon, after dissection and before coloanal anastomosis (black arrow)

RESULTS

The first post-operative days were simple with stool movements at day 3, and feeding at day 4. Unfortunately, at day 11, the child presented an occlusive syndrome and a partial disunion of the coloanal anastomosis, requiring a discharge transverse colostomy.

The histopathology confirmed the diagnosis of angiodysplasia. On the left colonic flexure, a moderate aspect of these lesions was described.

One month later, after a normal colonic anterograde opacification and satisfying digital rectal examination, the colostomy was closed.

Two months after closure of the colostomy, the child regained 1 kg, had a normal transit (3 to 4 defecations per day) and normal haemoglobin results. No more bleeding episodes occurred. Follow-up is now more than two years. Continence and transit are normal, with a few medication (SMECTA®).

DISCUSSION

To our knowledge, we report the first case of minimal-invasive surgery for rectal angiodysplasia. Its originality comes from the discovery of bifocal lesions, on the rectum and the left colonic flexure.

Minimal-invasive surgery allows a comprehensive exploration of the bowel. In this case, the discovery of the second

angiodysplastic zone on the left colonic flexure was made by laparoscopy, while the preoperative colonoscopy was normal.

The rectal wall dissection was easy and non hemorrhagic (no per-operative transfusion). This step was facilitated by laparoscopic magnification and probably most respectful of pelvic nervous structures.

The histopathologic results of the lesions in this case are similar to the reported cases in literature: venous dilatations in the sub mucosa.¹⁻³ In this case, the colonoscopy did not reveal the moderate lesions on the left flexure. Even if it is difficult to predict the evolution and bleeding of these lesions, a systematic removal is indicated.

The laparoscopic surgery was easily performed, but the postoperative course was complicated. Traction on both anastomoses are probably responsible for these complications. In our mind, they could have been avoided by a two-time procedure: a first time with Swenson's technique, and a second time, after healing, on the left colonic flexure. With this two time procedure, we probably decrease the risk of leakage. A single time treatment for multifocal lesions is not recommended, and particularly in this situation, where the lesions remain close to each other.

A complete exploration of the colon is necessary since multiple localizations are possible and can be unseen by preoperative tests.⁴ Laparoscopy is an interesting way for this global bowel exploration.

CONCLUSION

Laparoscopy is a good approach for pull-through in the treatment of angiodysplasia. We recommend it, because

more than the advantages of a minimal invasive surgery, it allows a global sight of bowel lesions.

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