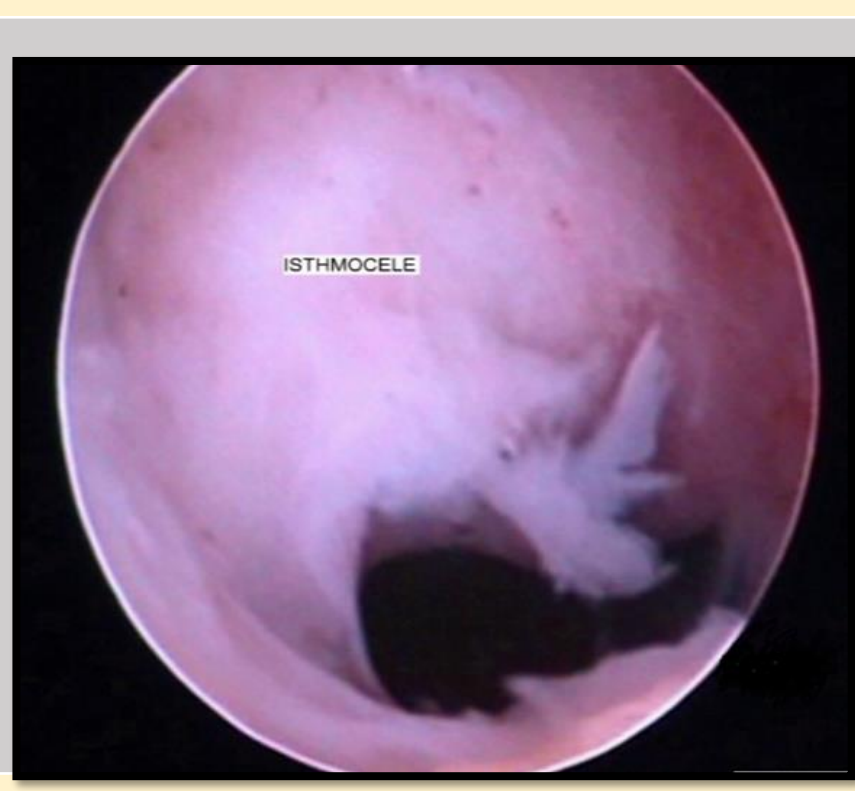


Isthmocele repair by using laparoscopy combined to hysteroscopy

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Introduction:

The isthmocele corresponds to the presence of a dehiscence at the level of the uterine caesarean scar. This niche has been known since the 1950s^[1,2], and has been relatively little studied. It is the dehiscence of the hysterotomy scar, also called isthmocele. Currently, due to the progress in imaging and the increase in the number of investigations in women, the frequency of discovery of isthmoceles is increasing. This lesion can be asymptomatic or cause disabling symptoms: abnormal bleeding, pelvic pain or reduced fertility. Laparoscopy is an approach to treat this isthmocele when the anterior isthmic uterine wall opposite the scar is less than 03 millimetres after hysteroscopic detection.

Method:

❖ We present a case report series of four patients (04) treated at the BEO University Hospital in Algeria by a double hysteroscopic and laparoscopic approach. Patients were aged between 28 and 34 years with a history of caesarean sections, had significant isthmoceles causing cycle disorders and/or secondary infertility. As the residual myometrium was less than 2 millimetres, we recommended treating these niches by laparoscopy, starting with an initial hysteroscopic identification of the niche and then by transillumination during the laparoscopy. Incision then excision of the old scar after detachment of the bladder while avoiding coagulation on the edges in order to optimize good healing after laparoscopic sutures in two planes. An assessment of the disappearance of the symptoms and an estimation of the residual myometrial thickness at three months postoperatively was carried out.

1st clinical case

- ❖ 27 years old with one C-section; consulted for abnormal uterine bleeding (AUB) and infertility.
- ❖ She benefited from a laparoscopy with adhesiolysis of the uterus from the abdominal wall (Figure 1) and the hysteroscopy (Figure 2), to identify the isthmocele before the incision and excision of the scar.
- ❖ Patient had 03 months of contraception after the surgery.
- ❖ Results: Anterior isthmic wall of 8.8 mm at vaginal ultrasound and pregnancy 04 months after stopping contraception (Figure 3)

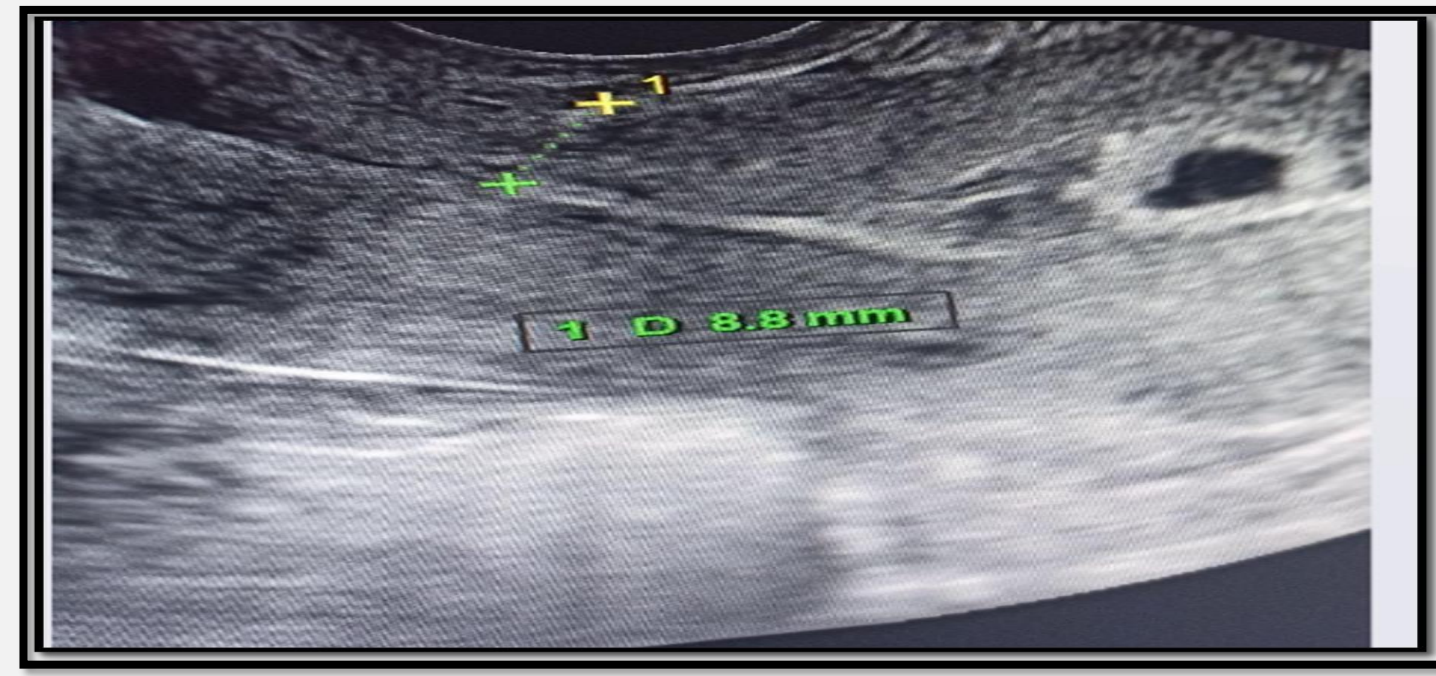
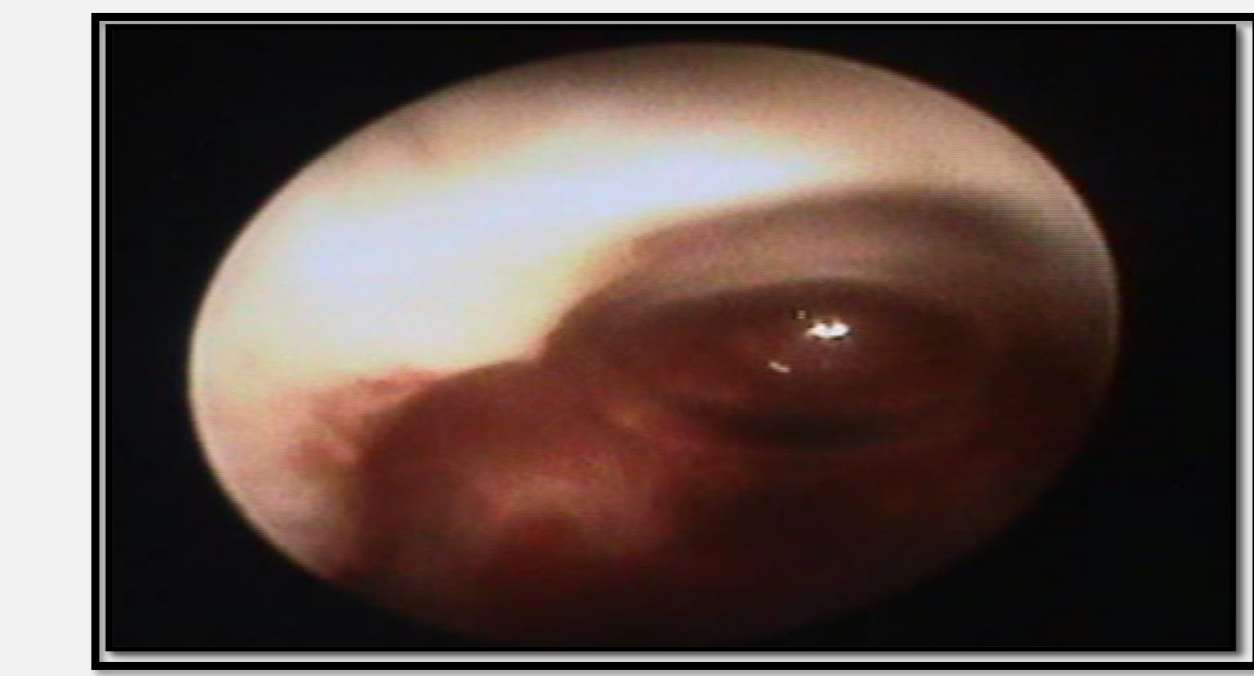
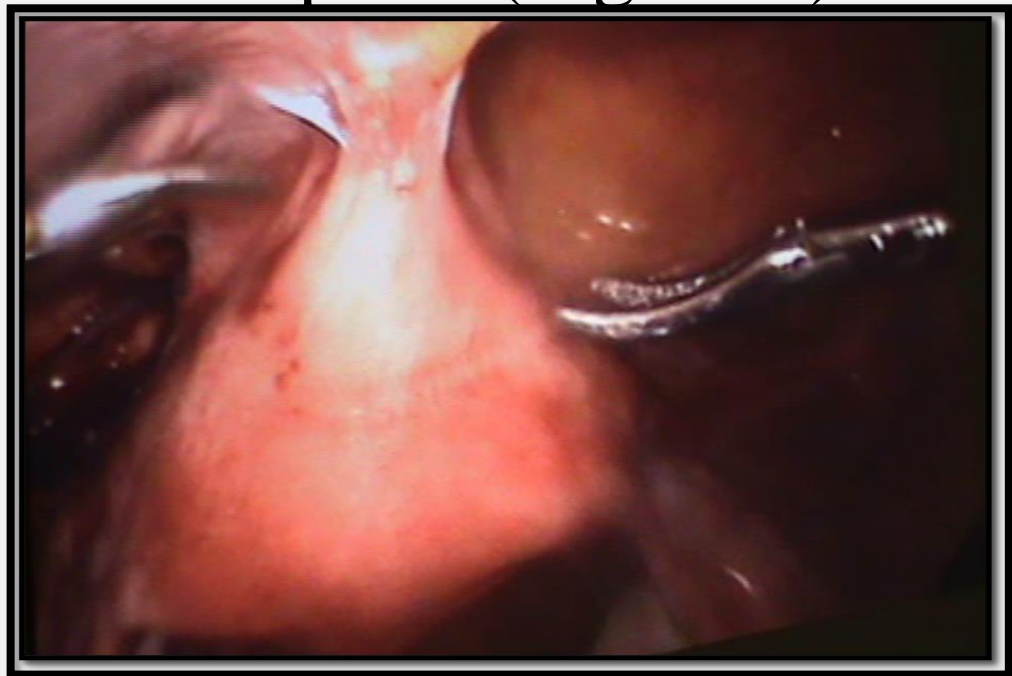


Figure 1: Uterus adherent to anterior wall at laparoscopy

Figure 2: Niche in hysteroscopy

Figure 3: Anterior uterine wall thickness and fundal pregnancy after surgery

2nd clinical case:

- ❖ 29 years old with one cesarean-section and secondary infertility of 07 years associated to AUB.
- ❖ Ultrasound: Large defect with 20 mm of depth and thickness of residual myometrium at 01 millimeter (Figure 4)
- ❖ She underwent surgery by laparoscopy and hysteroscopy identification for isthmocele (Figure 5;6)
- ❖ Result: Absence of cycle disorders with improvement of the symptomatology and improvement in the thickness of anterior myometrium at 07 millimeters in ultrasound (Figure 7)



Figure 4: Ultrasound isthmocele

Figure 5: Hysteroscopic isthmocele

Figure 6: Laparoscopic view and hysteroscopic identification of the niche

Figure 7: Myometre thickness 03 months post-op

3rd clinical case:

- ❖ 35 years old with three cesarean-sections that caused niche complicated by infertility of 04 years and AUB
- ❖ Surgery: She underwent a Hysteroscopic resection of edges (Figure 8) and laparoscopic sutures of a defect.
- ❖ Result: Pregnancy one year after surgery.

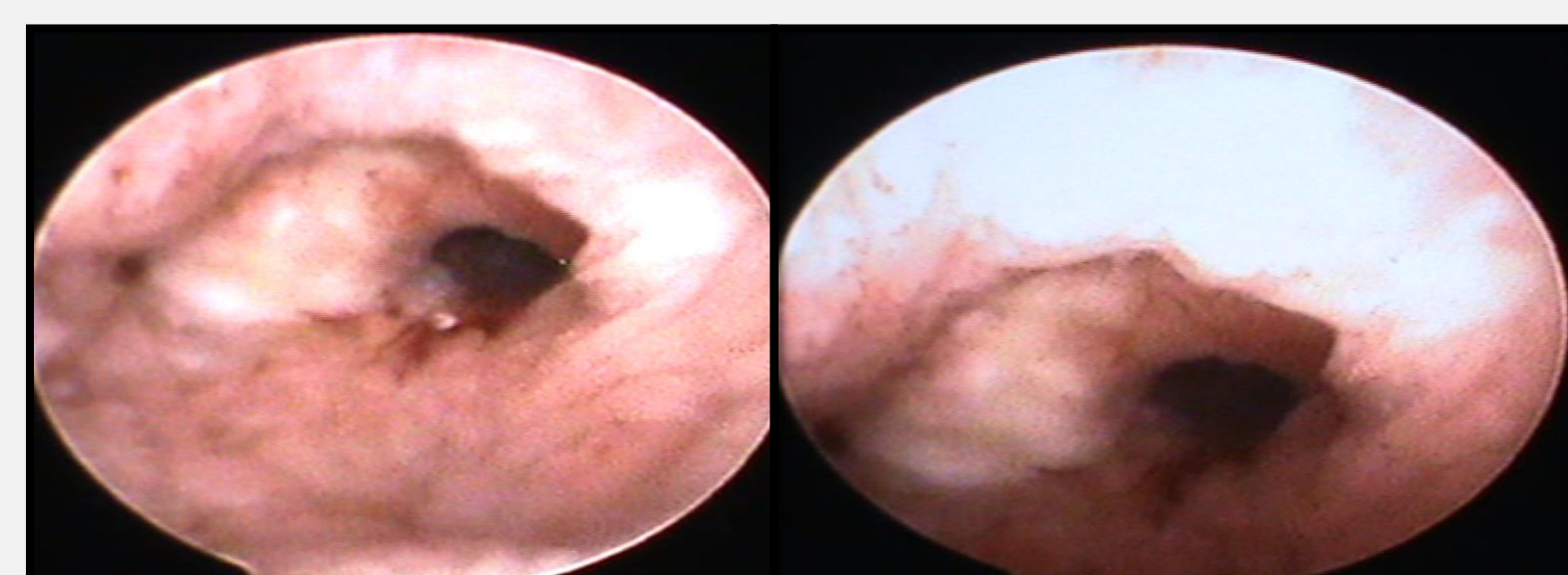


Figure 8: Two images of isthmocele at hysteroscopy

4th clinical case:

- ❖ 32 years old with two cesarean-sections suffered from isthmocele complicated by abnormal uterine bleeding.
- ❖ Ultrasound: Thickness of residual myometrium at 01,3 millimeter (Figure 9)
- ❖ She underwent surgery by laparoscopy and hysteroscopy identification for isthmocele (Figure 10;11)
- ❖ Result: Absence of cycle disorders with improvement of the symptomatology and improvement in the thickness of anterior myometrium at 07 millimeters in vaginal ultrasound (Figure 12)

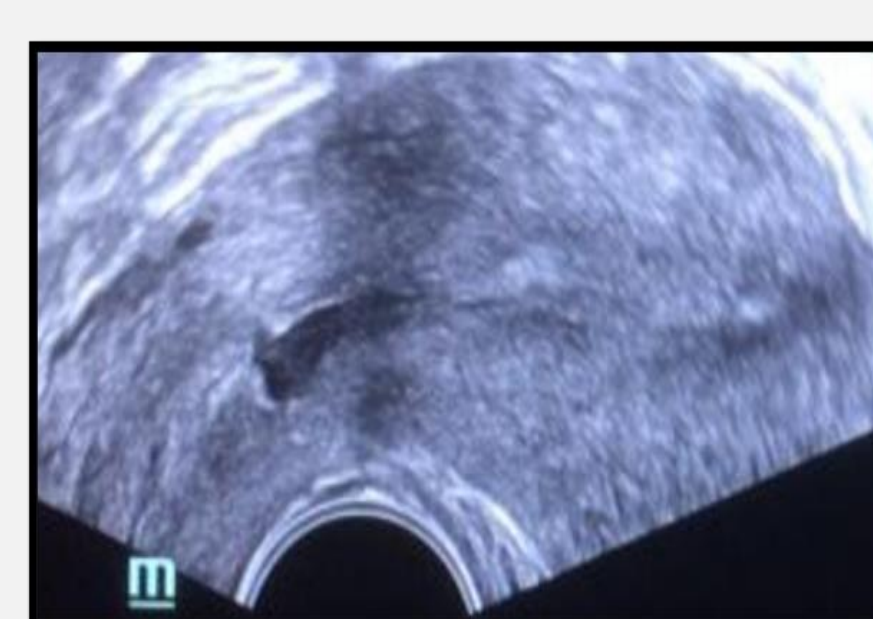


Figure 9: Isthmocele at Ultrasound before surgery

Figure 10: Isthmocele at laparoscopy

Figure 11: Suture of the peritoneum

Figure 12: Ultrasound 03 months post op

Discussion

The surgical treatment of isthmocele is not standard and depends on the size of the niche and the residual myometrium as well as the symptomatology.

Several routes are proposed: hysteroscopy, vaginal route or laparoscopy.

In our case series study, we chose to treat our four patients by laparoscopy after hysteroscopic identification of niches.

All the four niches had thickness of the anterior uterine wall less than 02 millimeters at vaginal ultrasound.

Our four operated patients were symptomatic with abnormal uterine bleeding and only three were infertile and had no complications during or after surgery.

Improvement of the symptoms was noted in all 04 patients and pregnancies occurred in two patients among the three infertile ones at 04 months and 06 months after stopping a contraception of 03 months, otherwise in 10 and 12 months respectively on the postoperative period.

Donnez^[3] reported a pregnancy rate of 44% after laparoscopic repair. These good results are consistent with those found in the literature. The prospective study by Marotta et al^[4], involving 13 patients operated by laparoscopy (with excision of the isthmocele and closure in two planes), reported total disappearance of abnormal bleeding postoperatively.

Zhang et al^[5], in 2016, also reported a statistically significant decrease in menorrhagia after treatment.

Donnez et al^[6] showed 91% improvement in symptoms in their prospective series of 38 patients.

In our four cases, we noticed the gain in anterior myometrial thickness superior at 07 millimeters by vaginal ultrasound.

Li et al in 2016^[7] published a retrospective comparative study between two groups, one receiving hysteroscopic treatment and the other laparoscopic treatment after hysteroscopic location.

Six months after surgery, the thickness of the uterine muscular wall was 4.2 ± 1.9 mm and 9.8 ± 6.2 mm for the control (hysteroscopy alone) and laparoscopy group respectively, indicating that the thickness of the muscularis in the laparoscopy and hysteroscopy group was significantly higher than that of the control group (hysteroscopy treatment alone ($p < 0.05$)).

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No conflict of interest
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