Hysteroscopic Resection Techniques

By Morris Wortman, MD [5]

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In the last 20 years there has been an increased acceptance of hysteroscopic surgery into the gynecological surgical armamentarium. Endometrial ablation and resection offer viable alternatives to hysterectomy for women with intractable uterine bleeding. Many women with myomata, polyps, uterine septae, and synechiae may now benefit from the convenience of hysteroscopic therapy compared to more aggressive surgical techniques.

Data amassed over the years show that for the treatment of intractable uterine bleeding, hysteroscopic resection techniques in general, and endomyometrial resection (EMR)[1] in particular, provide several benefits when compared to ablation techniques.

Advantages of Hysteroscopic Resection

- Tissue specimen. Endomyometrial resection provides a generous tissue specimen (Figure 1). In a series of 304 women undergoing hysteroscopic endomyometrial resection at our institution, 17 cases of simple and complex hyperplasia and 3 adenocarcinomas that were missed on previous endometrial biopsies were found.[2] The tissue specimens in this series of patients averaged 12.5 grams.
- Higher amenorrhea rate. Resection of at least 3 mm of endometrium produces an amenorrhea rate of over 85% in women whose average age was 41 years and who were followed up for 6 years.[3]
- Efficient and quick removal of large amounts of tissue. The average operative time in the series noted above was 23.4 minutes in women with an anatomically normal uterus.
- Simultaneous treatment of myomas, polyps, and septae. Resection techniques can easily be adapted to the removal of fibroids[4], polyps, and large uterine septae.
- The efficiency of resection techniques and the ability to remove large amounts of tissue within a relatively short operative time is an important consideration to avoid excessive fluid absorption.

Technique

Basic resection skills can be learned in a laboratory setting. Attach a slice of liver to a grounding pad and practice the technique as shown in Figure 2. Keep the electrode advanced about 7-8 mm. It will appear on the video monitor as occupying a “half screen.” While keeping the distance fixed and using 100W PURE CUT current, bury the full depth of a 25 Fr loop and slide it along the surface of the liver until a uniform depth (about 5 mm) of tissue is obtained. Hysteroscopic resection is very efficient in removing normal endomyometrium, polyps, and fibroids. It is important to master hysteroscopic endometrial ablation techniques before performing resection procedures. Endometrial ablation can be accomplished with roller balls, roller bars, coagulating loops, and VaporTrode® Vaporization Electrodes (Figure 3).

Avoiding Complications

When attempting myomectomies begin with simpler techniques such as pedunculated fibroids. Neuwirth's myoma “shaving” technique is an excellent basic technique and can be mastered on small (less than 2 cm) myomata.[5] Place a loop behind the fibroid, and using an Iglesias™
Working Element, draw only the loop towards you. Do this repeatedly until the procedure is complete. The shaving technique produces small chips that need to be periodically removed. A disadvantage of the technique is that it is time consuming. For myomata larger than 3 cm, the technique can be modified by keeping the Iglesias Working Element at a fixed distance of 8-10 mm. By drawing both the working element and loop toward you, the myoma can be removed in long continuous strips. The myoma resection technique is safe and efficient for removal of larger fibroids and endomyometrium, and can be accomplished quickly while avoiding excessive fluid absorption.

**Ultrasonic Guidance**

At our institution, complex procedures such as myomata with a substantial intramural component or EMR are performed under sonographic guidance (Figure 4). Resection carried out under sonographic guidance in lieu of laparoscopy can avoid uterine perforation. A skilled sonographer can quantify the amount of tissue remaining between the resectoscope and the uterine serosal surface.

**Fluid Management**

An automated fluid management system such as CIRCON’s Dolphin® (see above) provides consistent and accurate control of fluid pressure, which is essential to avoid fluid intravasation. It is important to remember that most healthy patients can absorb up to 17.6 ml/kg of glycine. Assume that unexpected large amounts of fluid will be absorbed in a short time. Stop the procedure until an evaluation can be completed.

**Summary**

There are many potential uses for hysteroscopic resection techniques. Endomyometrial resection, myomectomies, polypectomies, and removal of uterine septae are a few examples. Variations of these techniques have been successfully used in the treatment of cervical stenosis[5] and cervical intraepithelial neoplasia which are confined to the endocervical canal.

**References:**

2. Wortman M, Daggett A. Unpublished data.

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