

Vessel-sealing reduces operative time, loss of blood

Levy B, Emery L. Randomized trial of suture versus electro-surgical bipolar vessel sealing in vaginal hysterectomy. *Obstet Gynecol.* 2003;102:147-151.

OBJECTIVE To compare blood loss and procedure time for vaginal hysterectomy using electro-surgical bipolar vessel sealing versus sutures.

RESULTS Compared with sutures, vessel-sealing technology resulted in a 27% reduction in operative time and a 47% reduction in blood loss.

METHODS Sixty women scheduled to undergo vaginal hysterectomy in a single surgical practice were randomized to electro-surgical bipolar vessel sealing or sutures for hemostasis.

Procedure time was measured from the initial mucosal injection to closure of the vaginal cuff with satisfactory hemostasis.

Blood loss was estimated by the anesthesia service.

The study was sponsored by Valleylab (*Boulder, Colo*), the manufacturer of the electro-surgical bipolar vessel sealer (LigaSure) used in the trial; both investigators had financial ties to the company.

OUTCOME Mean procedure time was 39.1 minutes (range 22–93) for electro-surgical bipolar vessel sealing and 53.6 minutes (range 37–160) for sutures.

Mean estimated blood loss was 68.9 mL (range 20–200) for electro-surgical bipolar vessel sealing and 126.7 mL (range 25–600) for sutures.

Complication rates and length of stay did not differ by technique.

EXPERT COMMENTARY It took many years for the concept of bipolar desiccation for large

vessel hemostasis to be accepted after I introduced the idea at the 1985 meeting of the American Association of Gynecologic Laparoscopists. The Kleppinger bipolar forceps I used (*Richard Wolf, Rosemont, Ill*) were developed for laparoscopic tubal sterilization. Bipolar desiccation for oophorectomy was considered too dangerous to be published in 1985–86; only a brief abstract of this presentation is in the medical literature.¹

Since the 1988 introduction of laparoscopic hysterectomy using bipolar vessel sealing, bipolar desiccation has prevailed and has become the standard over later techniques, such as staples and sutures.²⁻⁴

High percentage of outpatient procedures. This study is remarkable not only because electro-surgical bipolar vessel sealing achieved a 27% reduction in operative time and a 47% reduction in blood loss, but also because 78% of the cases were outpatient.

I am pleased to see that bipolar techniques for vaginal hysterectomy are being so rapidly accepted (over 100 cases have been done at the Mayo Clinic, Scottsdale, with minimal problems). This acceptance—coupled with the use of laparoscopic hysterectomy—should make abdominal hysterectomy a rare event in the future.

A safe, easy-to-use technology. The electro-surgical vessel sealer is powered by bipolar energy and compression from its handset. The idea of a “cool” cycle after heated sealing is similar to the concept behind the Wolf or ERBE (*Atlanta, Ga*) bipolar ammeter, which audibly signals the surgeon when the tissue is desiccated to prevent further passage of energy that would increase char around the treated area.

This new bipolar technology (which is

actually old technology for the laparoscopic surgeon) will prove valuable in patients with vaginal access so limited that suture ligation of the uterine-vessel and broad-ligament pedicles is difficult. It is much easier to clamp and desiccate these pedicles. Even so, this technique requires a suture to be placed around the uterosacral-ligament pedicles, so that they may be used for vault support.

Adequate access is crucial. In vaginal hysterectomy, access is of utmost importance, since the surgeon must be able to reach the uterosacral ligaments in order to suture-ligate them and, later, close the pubocervical ring. Vaginal surgery may not be possible if access to the uterosacral ligaments is limited; when this is the case, laparoscopic hysterectomy is usually the preferred route.

BOTTOM LINE Electrosurgical bipolar vessel sealing is an effective alternative to suture in vaginal hysterectomy. I enthusiastically recommend it and look forward to doing my next hysterectomy in the manner described in this paper, provided there is adequate vaginal access. ■

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REFERENCES

1. Reich H, McGlynn F. Laparoscopic oophorectomy and salpingo-oophorectomy in the treatment of benign tuboovarian disease [abstract]. *J Reprod Med.* 1986;31:609.
2. Reich H, DeCaprio J, McGlynn F. Laparoscopic hysterectomy. *J Gynecol Surg.* 1989;5:213-216.
3. Reich H, McGlynn F, Sekel L. Total laparoscopic hysterectomy. *Gynaecol Endosc.* 1993;2:59-63.
4. Levy BS, Abu-Rustum NR, Reich H. Update on hysterectomy: new technologies and techniques. *OBG Management.* 2003;15(2):S1.

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