

# SUBMUCOSAL ELECTRIC WELDING OF THE COMPLICATED HEMORRHOIDS

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The Live Soft Tissue Welding Technology research began in 1993 at the Paton Electric Welding Research Institute and managed by IAW, Paton's international department. CSMG Technologies, Inc., owner of the technology, began financing the R&D in 1996. Since 2000 more than 6,000 successful human surgeries have been performed. This paper is limited to the treatment of hemorrhoids that are in the II—IV degrees. U.S. and other world patents have been issued.

Kyiv City Hospital #1 has been using the Tissue Welding Technology (TWT) since 2003 for such surgical procedures as vessels sealing, mobilization of organs and removal of tumors in the abdominal and thoracic cavities, welding repair of wounds of lungs and bullous disease, welding repair of liver and spleen, reconnection of intestine. A welding unit comprising a set of welding instruments was developed.

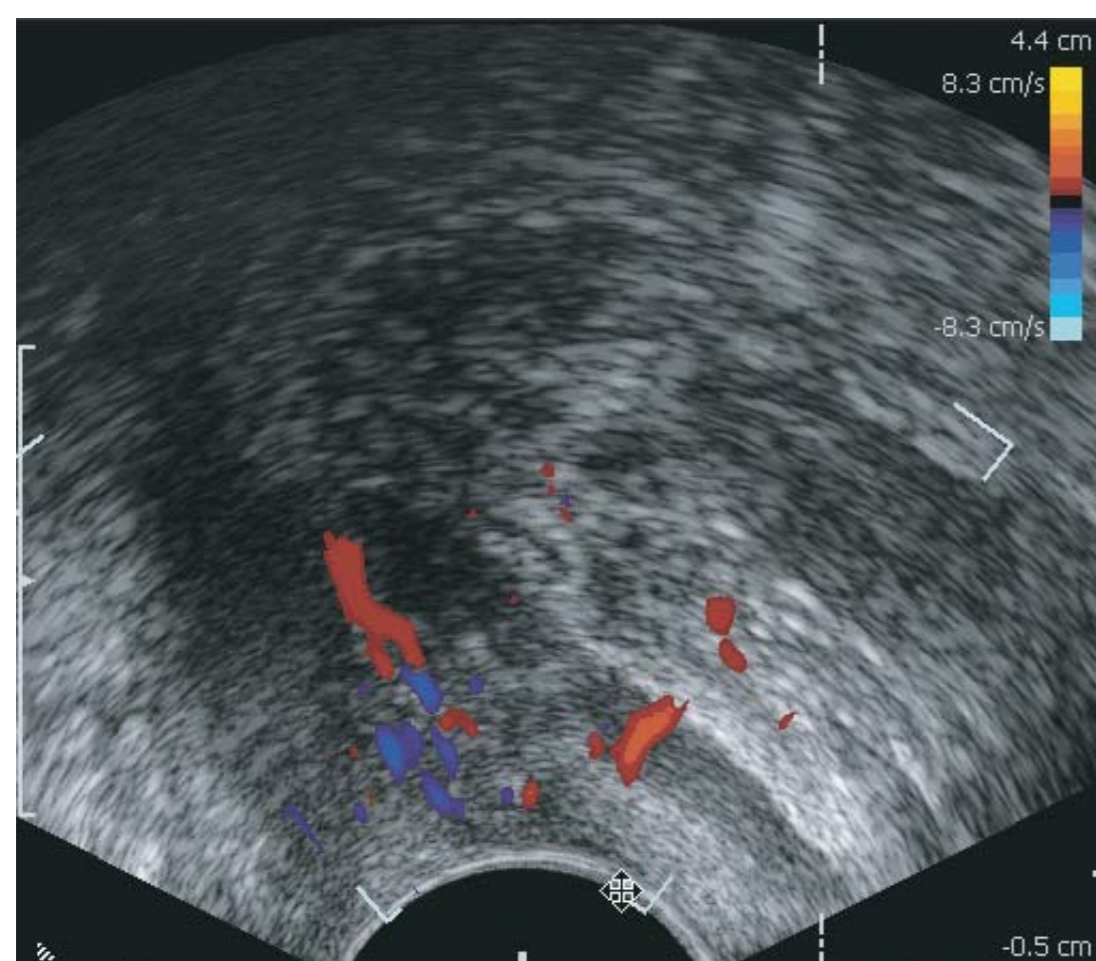
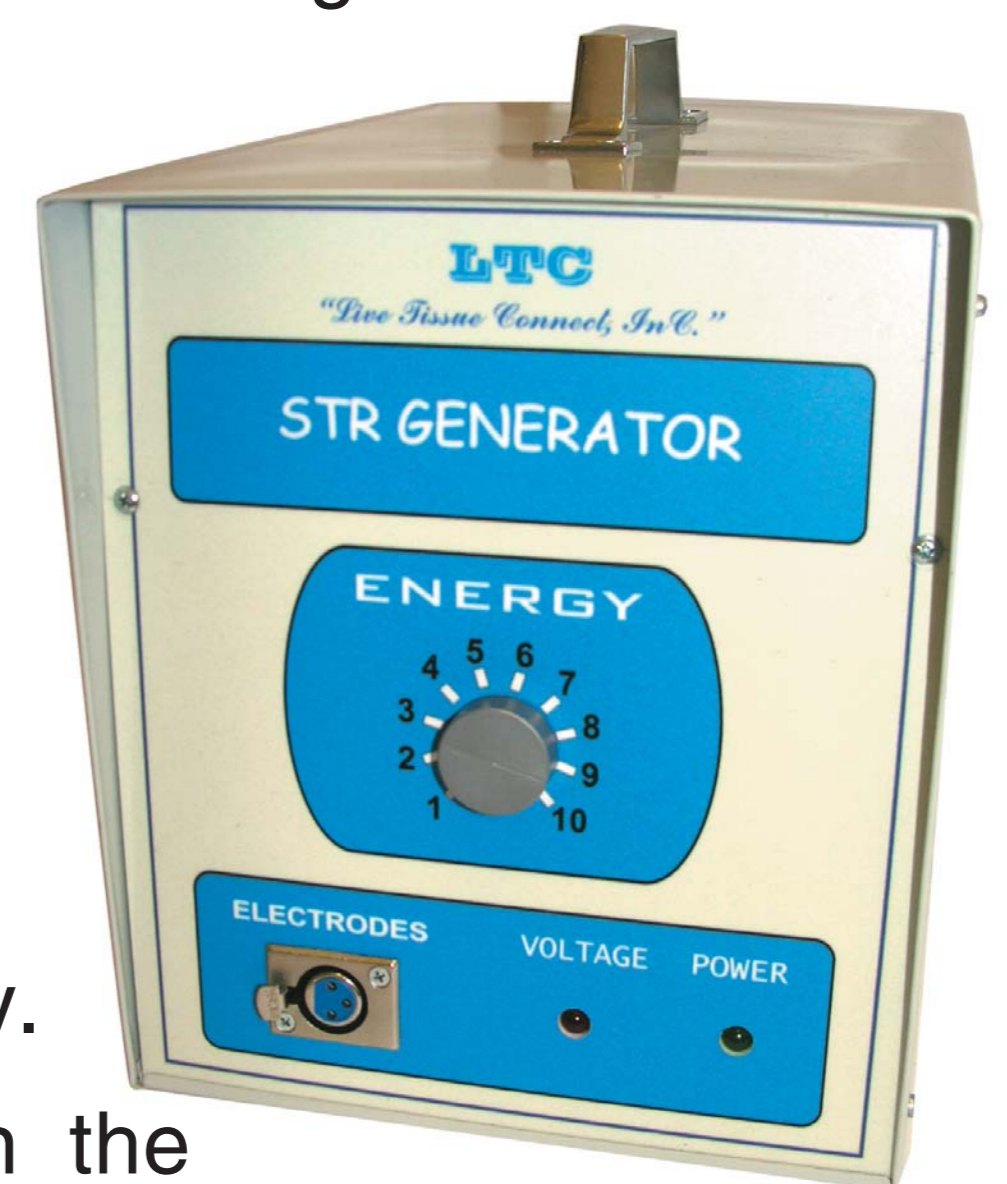
**STUDY METHODS:** 60 patients with hemorrhoids degrees II—IV were randomized into three groups by type of surgical procedure:

- Submucosal procedure (hemorrhoidectomy) using the Tissue Welding Technology (14 patients);
- Closed Ferguson Procedure (FP) using the Tissue Welding Technology (16 patients);
- Conventional closed Ferguson Procedure, performed by incision (30 patients).

The patients were regularly followed up from 1 to 60 days after surgery.

**RESULTS:** There were no statistically significant differences between the groups in terms of age, gender, symptoms duration, degree or number of hemorrhoids.

Pathologic hemorrhoid blood flow was blocked in all cases.



Mean indicator/ procedure type	TWT- submucosal	TWT-FP	Conventional FP	P<0.0001
Pain, by 100 point score: 1st, 3d day	78.1–45.5	82.2–67.4	84.1–76.5	
Anal spasm, by 100 point score: 1st, 5th day	32.5–12.6	51.4–27.5	78.4–37.2	
Need for use of analgesic, narcotic/non-narcotic	0.85/8.6	3.3/12.1	4.1/13.1	
Time off from work, II/IV hemorrhoids degree	10/18	14/26	19/31	

Pre- and postoperative (in a 30 days after submucosal procedure using TWT) views are demonstrated.

**There were two postoperative complications cases in 2004 in the Ferguson Procedure using TWT group at the time when the TWT method was introduced into clinical practice at our hospital: perianal wound inflammation and wound bleeding. They were managed by conservative methods.**



**CONCLUSIONS:** The submucosal welding procedure done using the TWT on hemorrhoids is efficient in cases III, IV, and especially II hemorrhoids degree. The use of the TWT completely stops pathologic hemorrhoid blood supply, favors less pain and spasm, earlier patient's return to work.

**Long-term results confirmed no relapse of the disease during the 3 years following the surgery.**