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Radiofrequency fistulotomy in anal fistula. An alternative to conventional surgical fistulotomy

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Abstract

Most surgeons prefer fistulotomy by laying an open technique in treating different types of anal fistula. We used the radiofrequency fistulotomy procedure in 136 cases of various types of low anal fistulae in a one-year period. The patients were followed for 18 months. The average time for complete wound healing was 37 days and to resume routine 7 days. Delayed wound healing occurred in 7 patients. It failed completely in 2 patients and 3 patients lost to follow up. No patient had interference with continence. Radiofrequency fistulotomy method was effective with easy tissue excision and minimum bleeding. It permitted to be used in deep and difficult areas like the adjoining tracts. The failure rate was 3.7 %. *(Ref. 5.)*

Key words: anal fistula, radiofrequency, fistulotomy, recurrence.

The recurrence of anal fistula after surgery had lead surgeons to search for alternative diagnostic aids to identify the tracts and for fresh surgical procedures to reduce the risk factors, recurrence and impairment of continence. But still the lay open technique (fistulotomy) is considered the golden standard therapy by most of the surgeons.

The same technique of fistulotomy has been modified by us with the use of radiofrequency equipment and was found to be faster and easier than the traditional fistulotomy procedure.

Radiofrequency is a well-known surgical tool in the field of neurosurgery, plastic and reconstructive surgery and hepatology. But there are very few studies that refer to its use in the field of proctology.

Principle of radiofrequency – It is a method of simultaneous cutting and coagulating the tissues, using a high frequency alternate current. The effect of cutting, known as high frequency section, is executed without pressing or crushing the tissue cells. This is due to the result of heat produced by the tissue resistance to the passage of high frequency wave. The heat makes the intracellular water boil, increasing the cell inner pressure to the point of breaking it from inside to outside (explosion). This phenomenon is called as cellular Volatilization (1).

We used the radiofrequency generator Ellman dual frequency, (Ellman International, Hewlett, N.Y. USA). This instrument produces an electromagnetic wave of a very high frequency that reaches 4 MHz. The unit is provided with a handle to which different electrodes can be attached to meet exact requirements of the procedure (2). A ball electrode, a round loop and a fine needle electrode were extensively used in our procedure.

Materials and methods

In the period of 12 months from June 2000 to July 2001, we operated 136 cases of low (intersphincteric and transphincteric low) fistula by this technique. An informed consent was obtained from all of the patients. The study was approved by the local ethics committee and was carried out according to the declaration of Helsinki.

The procedure of radiofrequency fistulotomy

97 patients were operated under spinal anesthesia while 39 were given a short general anesthesia. The patients having the external opening within 2 cm of anal verge were operated under short general anesthesia.

The procedure was performed keeping the patients in a lithotomy position. While viewing through anoscope, methylene blue dye mixed with hydrogen peroxide was instilled through the exter-

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nal opening of fistula. The dye emerged out from the internal opening. Addition of hydrogen peroxide helped in opening the tracts (3).

Then a malleable sinus probe was passed through the external opening to come out through the internal opening. With a fine needle electrode, the sinus tract was split opened along with the overlying skin and subcutaneous tissues. The edges of the wound were held with two tissue forceps and with the round loop electrode; the complete tract was shaved off. The bleeding points were coagulated with the ball electrode.

The wound was washed with antiseptic solution and covered with an absorbent dressing.

After care – The patients were discharged on the next morning of the procedure and were called every week for wound inspection. Frequent office visits during the postoperative period helped in prompting the patient with hints of wound care. It also permitted the author to watch wound-healing progress and observe problems if any.

Results

The mean wound healing period was 37 days (range 25–45 days).

Average period of being off-work was 7 days (range 3–11 days).

None of the patient had any interference with the continence.

Delayed wound healing was observed in 7 patients. Of them, 3 did not report again. In the remaining 4 patients there was a premature closure of the proximal wound while the distal end remained unhealed. The healed edges of the proximal wound were slit opened under local anesthesia. The wound healed in two of them. But in the remaining 2, it remained unhealed. These two patients had a discharge from a small wound left behind despite repeated attempts to refresh the edges. These were termed as "failure of wound healing" rather than recurrence.

Discussion

In contrast to conventional scalpel surgery, radiofrequency method of fistulotomy was found effective with effortless tissue excision, negligible bleeding and a clean operative field. It was possible to use this tool in deep and difficult areas containing adjoining or secondary tracts. There was minimal postoperative pain and discomfort in bodily movements, which allowed the patients to resume routine early (4). There was no case of postoperative infection. The failure rate of 5 in 136 patients (including the 3 who did not report again) was 3.7 %.

Radiofrequency can be used as an alternative to conventional fistulotomy for the following reasons.

1) Minimal tissue trauma and fewer intra and postoperative complications.
2) Versatile options with different types of electrodes.
3) Cost effective with low maintenance cost.
4) Portability of the equipment.
5) Compared to electrocautery, the active electrode of radiofrequency does not heat up and so there is minimal or no heat damage incurred to the surrounding tissues. This permits the surgeon to work in direct proximity of functional tissue.

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