

Radio Frequency 'Sutureless' Fistulotomy: An Effective Modification of the Conventional Technique

Dear Editor,

Anal fistula is defined as an abnormal communication lined by granulation tissue between the anal canal and the exterior i.e. the skin, which causes a chronic inflammatory response. The classical lay open technique is still the most favoured procedure. Slitting the complete tract from the external to internal opening is the basis of the traditional fistulotomy. This conventional procedure encounters a lot of bleeding from the cut surfaces needing multiple ligatures to tie the bleeding vessels. At times, certain raw areas, which cannot be tied individually, may need under-running also. Due to all these hindrances, the whole procedure becomes somewhat messy and time consuming.

In a study, we have used the radio frequency surgical device instead of the surgical knife and scissors. The device is called as the *Ellman Dual Frequency 4 MHz* unit by Ellman International, Hewlett, NY. The principle of radio frequency wave surgery is that the tissue serves as the resistance instead of the electrode; hence, there is no heating of the radiofrequency electrode. Instead, the intracellular tissue water provides the resistance and vaporizes without causing the heat and damage seen in electro surgery. This tissue vaporization also results in significant hemostasis without actually burning the tissue. In addition, there is no danger of shocking or burning the patient. The unit is provided with a handle to which different electrodes can be attached as per the requirement of the procedure. A ball electrode meant for coagulation, a needle electrode to incise the fistula tract and round loop electrode to shave the surrounding infected tissue has been used in our procedure.

The steps in the fistulotomy include 1) Injection of methylene blue dye with hydrogen peroxide; 2) Director probe inserted in the fistula; 3) To begin with, the skin overlying the probe, which is in the fistula tract, is coagulated by moving the ball electrode over its complete length. This reduced the amount of bleeding when the tract is slit opened; 4) The track is cut open along the probe with the help of the needle electrode that is kept in cutting and coagulation mode. This reduced the bleeding while cutting, and the dissection becomes smooth without a drag on the tissues; 5) The bleeding edges are caught in the hemostat and are coagulated with the ball electrode kept in coagulation mode. This avoids need of suturing or under running of the bleeding points and raw areas; 6) The edges along with the surrounding infected, fibrotic tissues are shaved with the loop electrode on cut and coagulation mode. As cutting and coagulation works simultaneously, the brisk bleeding often encountered in the conventional knife and scissor dissection is avoided.

Post operative care consists of dressing the wound twice a day after warm sitz bath. The patient is discharged on the next day of the procedure. Time off work is between 5 and 7 days after which patient could resume his routine. In our study, the failure rate is as low as 1.5%.

No major complications are encountered. Few minor ones comprised: Deep dissection may cause more scarring and longer time for healing. Excessive power of the unit can cause more smoke and charring. Accidental burns either on the part of the patient or operator due to unintended activation of hand piece has been noted. Development of edema in the surrounding tissue, if power is too high.

Radio frequency surgery, not to be confused with electro surgery, diathermy, spark-gap circuitry, or electrocautry, uses a very high frequency radio frequency wave. Unlike electrocautry or diathermy, the electrode remains cold. This is possible because of use of very high frequency current of 4 MHz, as compared to 0.5 to 1.5 MHz used in the electrocautry. As contrast to true cautery, which causes damage similar to 3rd degree burns, the tissue damage that does occur is very superficial and is comparable to that which occurs with lasers. Tissue damage with radio frequency Radio frequency surgery creates minimal collateral heat damage in the tissue resulting in rapid healing and leaves no ugly scar. Rapidity of treatment, a nearly bloodless field, minimal postoperative pain, and rapid healing are but few advantages of radio frequency surgery.

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