

## CONE BIOPSY OF THE CERVIX— A NEW TECHNIQUE

BY

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So much has been written about the technique of cone biopsy of the cervix, that we hesitate to add to the literature on the subject. We feel, however, that the method to be described has advantages of simplicity and versatility. There may also be some interest in the adaptation of a veterinary instrument, designed for the male animal, to use on the human female.

The first description of a "cone-amputation" was by Sturmdorf (1916). This is a fairly radical procedure, probably unnecessary for purely diagnostic purposes, and haemorrhage during the operation can be troublesome. Haemostasis is secured by suturing the mucosal flaps over the raw area. Thornton *et al.* (1954) advocated the use of lateral cervical sutures to control haemorrhage, and modifications and combinations of these techniques are widely used today.

Hyams (1928) introduced "electro-conization" for the treatment of chronic cervicitis, the principal object being to remove the diseased endocervical mucosa. This technique has been adapted for purposes of diagnosis, as by Crossen (1949) whose electrode is basically similar, though designed to give a much wider cone of tissue. Such methods have the great advantage that they may be virtually bloodless, but unfortunately they produce such charring of the biopsy specimen that subsequent histological examination is useless. Scott and Ballard (1962) were particularly severe in their condemnation of "electro-conization", and it seems to have fallen from favour. Hahn (1948) recommended following surgical cone-biopsy with an "electro-conization" to control bleeding.

A variety of ingenious instruments and techniques have been devised for cone biopsy,

ranging from Ayre's (1948) cervical scalpel to such elaborate procedures as the "freeze-coning" described recently by Sherif (1963). Between these extremes fall such devices as those of Gusberg (1949), Nolan and Budd (1951), Spencer (1955), and Ullery (1956), the last being a rather formidable instrument. Perhaps the chief disadvantage of these instruments lies in their lack of adaptability to the very varied shapes and sizes of the female cervix. With the exception of Ayre's knife they do not cope well with the bulky, lacerated, multiparous cervix, often with ectropion, so often met in diagnostic work of this nature.

There would be general agreement among gynaecologists that the control of haemorrhage is the chief problem in cone biopsy, and this concern is reflected in the literature. To reduce haemorrhage during the procedure, various authors have advocated the prior injection of haemostatic solutions, generally containing adrenaline, into the substance of the cervix. Ferguson and Brown (1960) gave an account of 50 cone biopsies performed during pregnancy, employing such a technique, and there are similar reports by Scott and Reagan (1956), Ferguson and Cavanagh (1959), Scott *et al.* (1960), Offen and Ferguson (1960) and Ayre and Scott (1961). Schulman and Ferguson (1962) recommended the use of a solution containing pitressin. In our experience, while such methods obtain satisfactory haemostasis, they are neither simple nor speedy. The solution has to be injected into multiple sites within the substance of the cervix, a fibrous and rigid structure, and very considerable force is necessary to achieve this.

The method to be described simply applies a strong elastic ring about the cervix, as high in the fornices as possible, to act as a tourniquet. This principle has been utilized by Markley (1956), who placed rubber tubing around the cervix, tightening it with a curved clamp. However, his technique requires the help of assistants, and it is difficult to apply the tourniquet if the patient is nulliparous, or if the vagina and cervix are not relaxed. These disadvantages do not apply to the method described here, which is simple, and applicable to all types of cervix. The instrument is well known in veterinary circles as the Elastrator, where it is used painlessly to castrate bull calves by occluding the blood supply to the testes (Figs. 1 and 2).

After the usual antiseptic preparation the cervix is grasped at 12 o'clock with a volsellum,

pulled down, and the stretched elastic band passed over and along the volsellum (Fig. 3). A second volsellum, passed through the band, is used to grasp the cervix at 6 o'clock, and the cervix and Elastrator manipulated until the band can be placed as high in the fornices as possible. The Elastrator is allowed to close, and is then withdrawn, leaving the band encircling the cervix as a tourniquet (Fig. 4). It is advantageous to apply two more volsellum forceps, at 3 and 9 o'clock respectively, for optimum control of the cervix. The cone biopsy is then taken, and for this we find Ayre's knife very satisfactory. The operation is virtually bloodless, allowing a perfect cone to be dissected out, almost at leisure (Fig. 5). After the diathermy current has been applied to the raw area the ring is divided with scissors, when one or two small

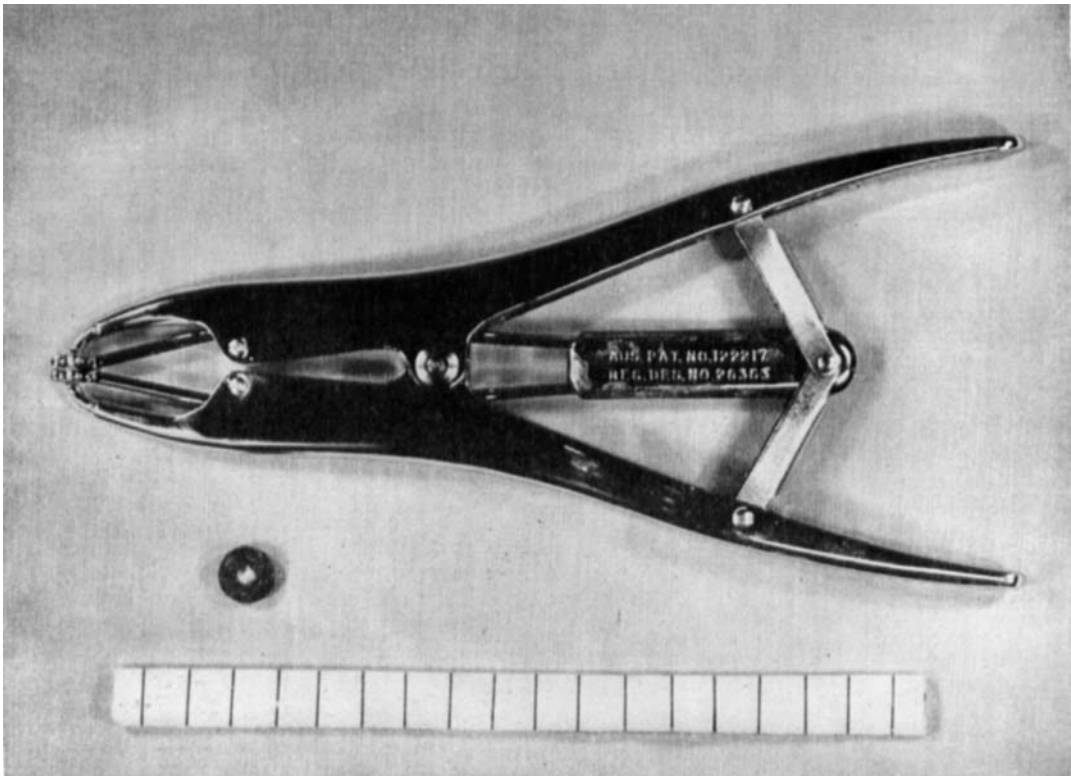


FIG. 1

Figures 1 to 5 illustrate the Elastrator, and the technique step-by-step. Full explanatory notes are given in the text of the article. (For clarity the band is shown on a model of the cervix in Fig. 4).

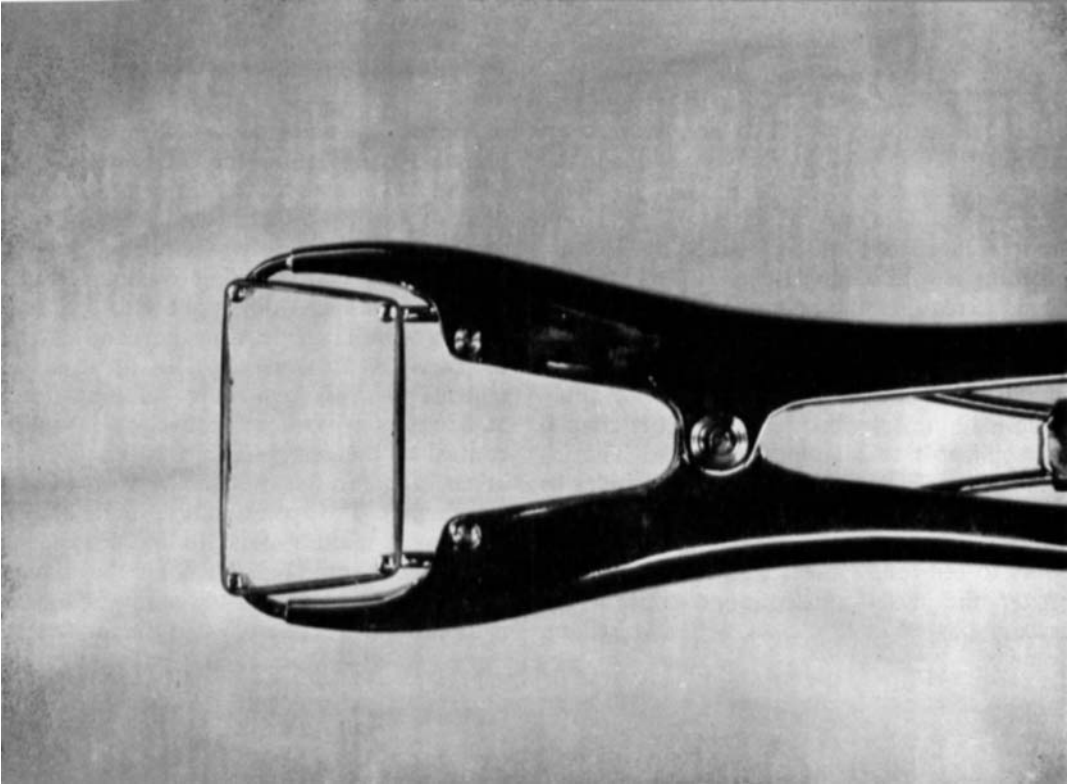


FIG. 2

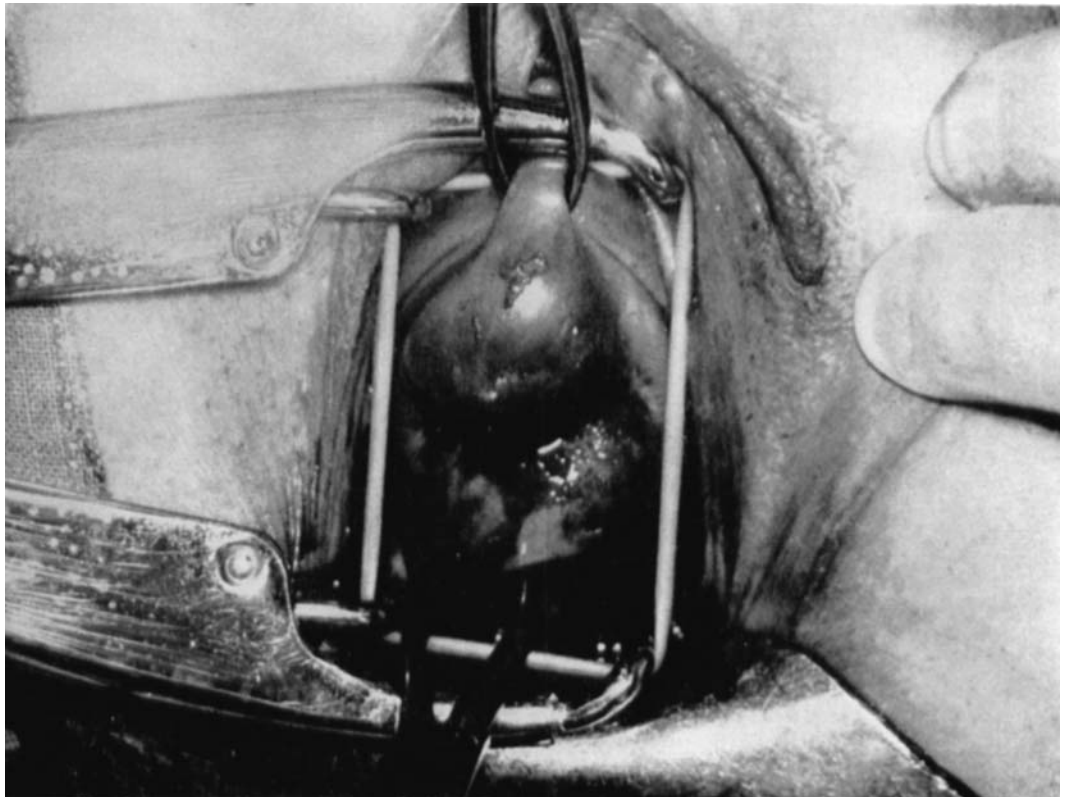


FIG. 3



FIG. 4

bleeding points may require further attention. We have never found the total blood loss to exceed 10 ml., and suturing of the cervix is unnecessary.

#### SUMMARY

A new technique for cone biopsy of the cervix is described, using a veterinary instrument known as the Elastrator, which places a strong

elastic ring around the cervix, as a tourniquet. The procedure is simple, rapid and virtually bloodless.

#### ACKNOWLEDGMENTS

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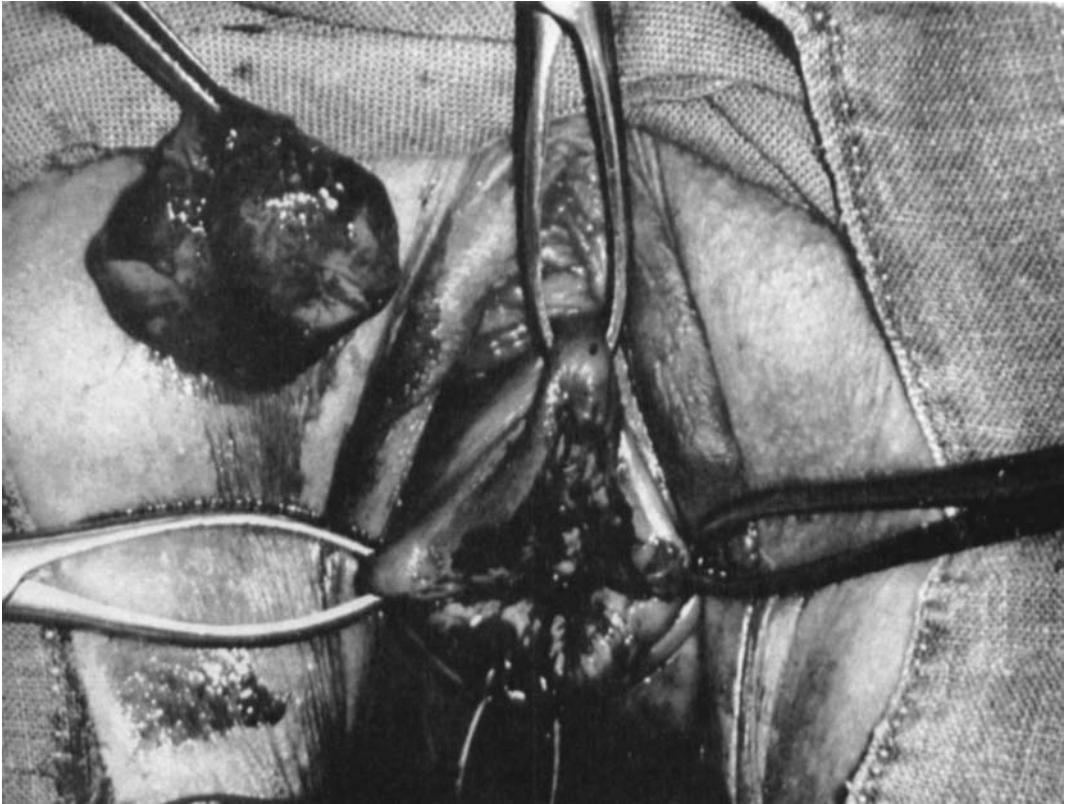


FIG. 5

The Elastrator was supplied by Drug Houses of Australia Ltd., Brisbane.

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