

Innovations

An innovative noose (ligated) electrode of fine metallic wire for radiofrequency surgery on chicken tissue

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PROBLEM

Bloodless dermatosurgery for benign pedunculated papillomatous growth, radiofrequency surgery is highly popular. However, no specialized electrode exists for big papillomatous growth. Hypodermic needles have been utilized as intralesional electrodes in hemostatic surgery. For radiofrequency surgery on chicken tissue, a simple noose electrode is adopted in this experimental study.



Figure 1: (a-c) Fine metallic steel and copper wires are prepared as noose electrodes for RF coagulation.

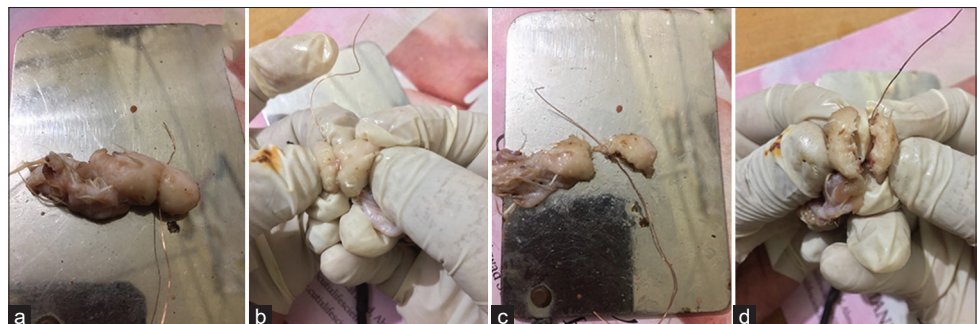


Figure 2: (a-d) Different stages of RF coagulation and cutting of a noosed pedunculated chicken tissue with wire electrode.

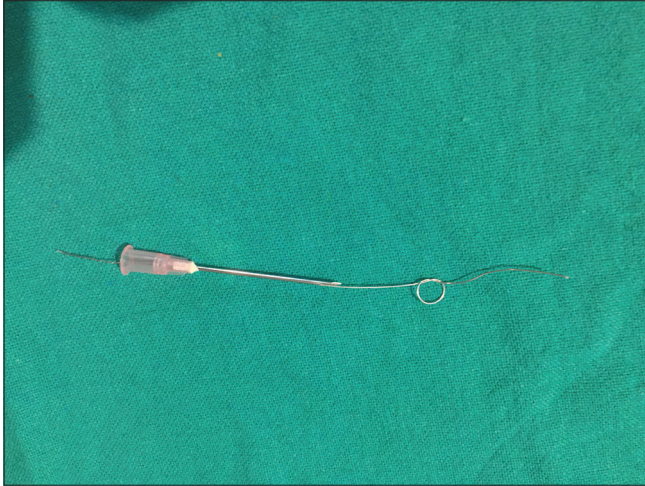
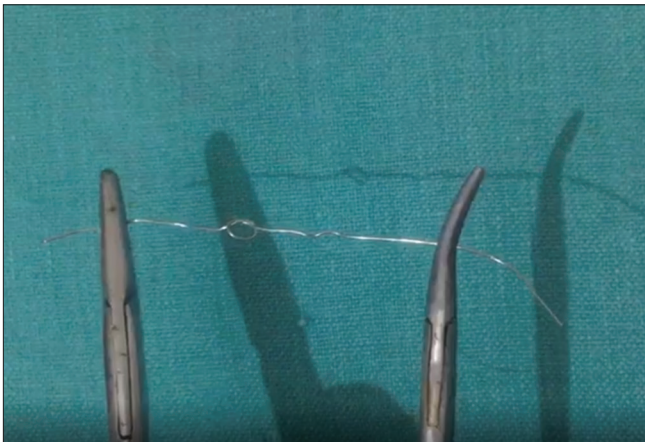


Figure 3: The wire can be passed through center or girth of the pedicle for intralesional noose electrode with the help of a hypodermic needle.



Video 2: The process of wire being pierced and tied it around a lump of chicken tissue.



Video 1: The ligated wire electrode is pulled gently apart during procedure to sever the coagulated tissue and to squeeze the feeding vessel.



Video 3: The lump of the tissue is coagulated to remove it from the major part.

SOLUTION

To produce hemostasis and reduce time consumption, a sterile noose (ligature) electrode made of fine metallic wire, preferably electric wire of copper (of 30–35 G or more), can be used to treat large pedunculated papillomatous growths like this chicken tissue [Figure 1a-c]. The autoclaved sterilized wire should be tied at the base of the lesion [Video 1]. The wire ends are then touched with a monopolar or bipolar electrode to coagulate the tissue and its vasculature at the base [Video 2]. Both ends of the wire are pulled apart gently throughout the process to sever the coagulated tissue and further squeeze the central vessels [Figure 2a-d and Video 3]. As a result, a big pedunculated mass can be hemostatically removed. For this, two or more intralesional noose electrodes, depending on the girth of the pedicle, can be utilized to improve the technique after passing the wire through the central section of the pedicle with the use of an 18-gauge hypodermic needle [Figure 3]. As a result, using fine metallic wire as a noose electrode (both external / perilesional and internal/intralesional)

may be a better alternative for hemostatic surgery on big benign pedunculated lesions. This experimental pilot study is done on the chicken tissue. The utility of this metallic wire as a noose or ligature electrode of wire has to be carried out on papillomatous skin lesions of human in further studies.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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