Surgical Incision by High Frequency Cautery

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Dear editor,

I read the article by Vedbhushan et al. with interest; I would like to thank the authors for doing the study [1]. High frequency diathermy has been an important tool to surgeon since use by Harvey Cushing in 1926 [2]. Numerous studies have been done on the use of high frequency diathermy for surgical incision.

However, there are few concerns. One is that the use of diathermy leads to wounds having a reduced tensile strength, an increased infection rate and a greater zone of wound necrosis histologically than those made with a scalpel. Ischaemic tissue damage may in turn lead to increased pain [3]. However, many of the earlier investigators have not differentiated between cutting and coagulation mode of diathermy. But from our experience, we see more erythema of wound margins thus signifying lateral tissue injury. Increasing interest in measurable outcome measures such as surgical site infection has resulted in the National Institute for Excellence publishing guidance stating that diathermy should not be used for surgical incisions [4].

The second concern is burn injury to the surgeon if the integrity of the surgeon's gloves is compromised. But this aspect is counterargued by surgeons because scalpel itself is estimated to account for significant number of sharp injuries [2]. I agree that skin incisions made by cutting diathermy are quicker and associated with less blood loss than those made by scalpel.

The third concern is diathermy smoke plumes and the potential long-term consequences of prolonged inhalation to the theatre staff and patients, as the smoke contains a number of carcinogens. A number of organisms have also been retrieved from plume raising the possibility of disease transmission [4]. Therefore, I suggest that smoke be sucked actively while using diathermy. We have been using diathermy for many patients with hepatitis B and C and HIV positivity, and patients with thrombocytopenia.

Judicious use of electrosurgery instruments is advised in order to prevent inadvertent thermal injury. Further research is needed to assess various issues relating to lateral tissue damage and adverse effects of diathermy smoke plume.

References

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