



Case Report

Histopathological Changes Induced By Radiofrequency Excision: A Case Report

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ABSTRACT

Radiofrequency surgery (RF) though it is a method of choice for excisional surgeries, it causes a lot of morphological changes sometimes to the extent that it masks the original picture. It becomes more important in case of undiagnosed malignancy because it masks the picture by massive dense vascular congestion along with coagulative necrosis leading to difficulties in diagnosing and taking further steps.

Keywords: radiofrequency cut, surgical incision, histomorphology.

INTRODUCTION

Radiofrequency surgery helps in simultaneous cutting and coagulation of tissues in an atraumatic manner. It uses radio waves that are released through a thin electrode, which cut, coagulate or reshape the desired tissue. [1,2] It is a method of choice of surgery because on an average it incurs a shorter operation time, shorter hospitalization, [3] significantly less post operative pain hence fewer demands for analgesics by the patients and early return to work. [4,5] Radiofrequency cut, but brings in a lot of morphological changes like masking original picture and accompanied by coagulative necrosis and massive, dense vascular congestion, thereby making further steps difficult. [5,6]

Herein we present a case of 45 years old male with a long standing erosive lichen planus of the lower lip with a complicating squamous cell carcinoma (SCC) as according to the first lower lip biopsy report.

The same lesion was excised by radiofrequency electrode to remove the lesion so as to study it in detail. But this time complicating SCC was masked. In this biopsy the original findings of erosive lichen planus were preserved. The radiofrequency cut lesion was studied macroscopically and microscopically. Grossly it appeared grayish with a haemorrhagic shrunken border. Microscopically it produced clearly demarcated coagulation necrosis upto a depth of 5.5mm bordered by an irregular zone of incomplete necrosis and fresh bleeding. Surrounding area showed different degrees of reduced nuclear

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staining. Blood vessels in this area were hyperaemic and dilated with injury to the walls along with microthrombi. Nerve fibres in the RFC site showed vacuolization and reduced cellular staining. Similar findings were observed in the study conducted by Thomas Deneke et al. [4,5]

Table no: 1 Comparison of the histopathological findings before and after RFC

| Biopsy report before RFC | Biopsy report after RFC |
|---|---|
| Erosive lichen planus with complicating squamous cell carcinoma | Erosive lichen planus with numerous congested capillaries, arteries and large dilated vascular spaces lined by single layer of endothelium. No evidence of SCC. (Erosive lichen planus with verrucous haemangioma.) |



Figure 1: Erosive lichen planus on the lower lip of 45 year old male

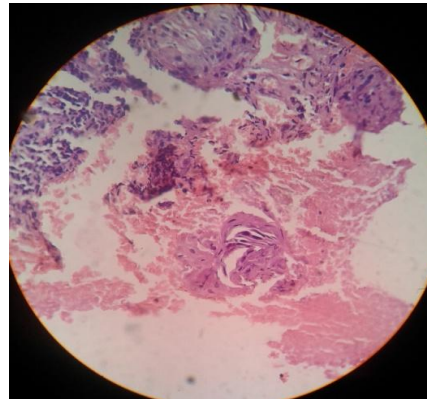
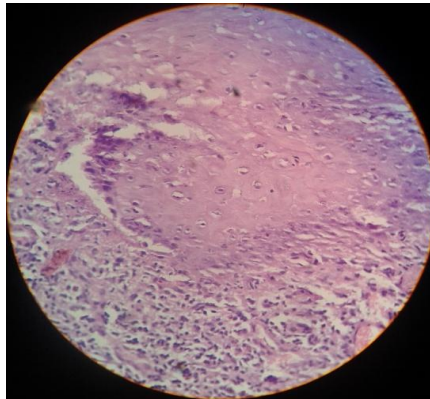


Figure 2: mic, H&E, 40x & 10x showing neoplastic change in long standing erosive lichen planus (Before RFC)

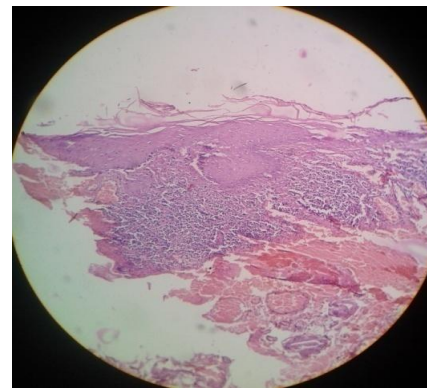
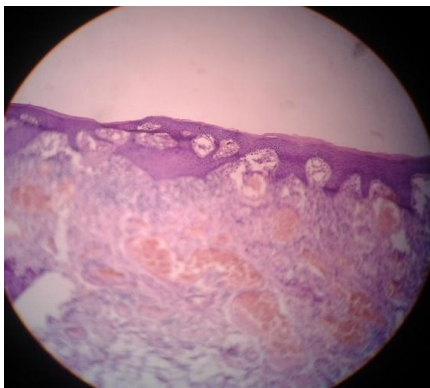


Figure 3: mic, H&E, 10x Erosive lichen planus features seen along with dense vascular congestion with masking of SCC features (After RFC)

A radiofrequency unit is supplied with a handle to which different electrodes can be attached to suit the requirement of the procedure. We used a needle electrode to incise the tissue, a loop electrode to reshape

the wound edges and a ball electrode to coagulate the bleeding points. Excision with RF does not need any suturing thereby saving time. This reduces the operation time and also the possibility of sepsis and wound

– related complications. RF surgery helps in sealing the sensory nerve endings and the leaking lymphatics there by reducing post operative pain. [1,7]

We are here by comparing both the histopathological findings before RFC and after RFC (Table no: 1)

CONCLUSION

RF is preferred over surgical resections for it being helpful to surgeons and patients both. It is advised that an ordinary scalpel cut be preferred to radiofrequency cut so that the minute cellular details are preserved and the lesion can be studied in detail and required steps may be taken.

REFERENCES

1. Pravin J. Gupta. A comparison of two operations for pilonidal sinus disease. Nigerian Journal of Surgical Research, Vol. 6, No. 1-2, Jan-June, 2004, pp. 41-45
2. Oshowo A, Gillams A, Harrison E, Lees WR, Taylor I (2003) Comparison of

- resection and radio-frequency ablation for treatment of solitary colorectal liver metastases. Br J Surg 90(10):1240–1243
3. Stefaan Mulier,1,2 Yicheng Ni,2 Jacques Jamart et al. Annals of Surgical Oncology (2007) DOI: 10.1245/s10434-007-9478-5
4. Hofmann A, Wustner M, Ciric B. Radiowave surgery: case report. Int J Aest Rest Surg 1996; 4: 45-47
5. Thomas Deneke, Krishna Khargi, Klaus-Michael Muller et al. Histopathology of intraoperatively induced linear radiofrequency ablation lesions in patients with chronic atrial fibrillation. European heart journal 2005; 26: 1797-1803
6. Kasper HU, Bangard C, Gossmann A, Dienes HP, Stippel DL. Pathomorphological changes after radiofrequency ablation in the liver. Pathol Int. 2010 Mar;60(3):149-55. doi: 10.1111/j.1440-1827.2009.02498.x.
7. Lee HC, Ho YH, Seow CF et al. Pilonidal disease in Singapore: clinical features and management. Aust N Z J Surg 2000; 70: 196-198.

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