

Electrochemotherapy:A Case Report

(SHORT COMMUNICATION)

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INTRODUCTION

Electrochemotherapy (ECT) is a type of chemotherapy that allows delivery of non-permanent drugs to the cell interior in recurrent or progressive cutaneous and subcutaneous tumours where salvage surgery becomes a challenge for the clinician[1]. It is based on the local application of short and intense electric pulses that transiently permeabilize the membrane of the cell, thus allowing transport of molecules otherwise not permitted by the membrane. In this article we report a case who has received ECT for carcinoma of buccal mucosa with recurrence of nodal swelling[2,3].

A male aged 34 years who was previously operated for carcinoma buccal mucosa 3 years back reported to our department with 9X 5 cm nodal swelling on right side of neck since 2 months (Fig.1). Patient had undergone adjuvant chemo-radiation after the



Figure.1: Before ECT. 9X 5 cm nodal swelling on right side of the neck.

surgery. So ECT was planned. Patient was given 1 cycle of ECT last month with 23 pulses and had also receive another cycle this month with 20 pulses. There is a very good response and patient is to be planned for continuation of ECT till nodal swelling regresses to 7 x 4 cm (Fig. 2). The treatment was performed using



Figure.2: Second Cycle of ECT. The nodal swelling regresses to 7x 4 cm.

intravenous or intratumoural drug injection and then followed by application of electric pulses generated by a SENNEX using needle electrodes. Tumour response to ECT as well as possible side-effects with respect to treatment approach or tumour histology and location of the tumour nodules and also electrode type were evaluated. Electrochemotherapy showed an objective response rate of more than 50 % in 2 months. ECT is an easy, safe, highly effective and cost-effective approach for the treatment of cutaneous and subcutaneous tumour nodules of different malignancies.

Applications for treatment of cutaneous and subcutaneous tumors have reached clinical use by utilizing drugs such as bleomycin or cisplatin. With the delivery of the electric pulses, cells are subjected to an electric field that causes the formation of nanoscale defects on the cell membrane, which alter the permeability of the membrane[4,5]. At this stage and for some time after pulses are delivered, molecules of the cytotoxic agents can freely diffuse into the cytoplasm and exert effect which is cytotoxic. Position of multiple electrodes, and subsequent delivery of pulse, can be performed during a session to treat the lesion, provided that drug concentration is sufficient enough to electroporate it. Treatment can be repeated over the course of weeks or months to achieve regression of large lesions[6]. Reduction of tumor size has been achieved with ECT faster and more efficiently than in

standard chemotherapy. ECT was equally effective regardless of the tumour type and size of the nodules treated. Side-effects of ECT were minor and acceptable.

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