



In Vitro Innovation in Delayed Surgical Obturator Good Impression Now, Enhanced Retention Then

T.T. Saravanan

State Head- Tamil Nadu Government , India

Abstract:

Obturator is an integral part in Post-surgical management of Maxillectomy patients. There are several techniques and materials used for taking impression in the post-surgical phase, but the choice of materials for fabrication of Obturators and the defect portion are Acrylic resins and Soft liners. Poly Vinyl Siloxane (PVS) is one of the best-known accurate impression materials with good short-term Biocompatibility, however its use as a delayed surgical obturator has not been validated till date. There is no literature to substantiate its long-term effects of Biocompatibility. Hence the aim of the study is to evaluate long-term cytotoxicity of polyvinyl siloxane on the Oral cell-line.

Method:

Part 1: Experimental samples of PVS of specified dimensions will be subjected to cytotoxic studies on oral cancer cell-line. The long-term cell viability (14 days) will be evaluated using MTT assay, cell cycle analysis and apoptosis.



Results:

The results were statistically analyzed by one-way ANOVA test ($p < 0.05$) showing significant decline in the live to dead cell ratio between the test and control group however there was no significant difference between the two groups in the decline of live to dead cell ratio.

Conclusion: The delayed surgical obturator placement is to restore and maintain oral function to a reasonable level during the postoperative period, without causing much discomfort. So far, PVS is well known for its use as good impression material, but the extended use of it as a DSO (defect portion) is still unexplored and untouched. This original research paper is first of its kind to use PVS as a defect portion of an obturator with scientific evidence.

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