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Research Article

SUDIPTA KAR'S MODIFICATION OF EAR PROSTHESIS-AN INEXPENSIVE MANAGEMENT OF MICROTIA

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ABSTRACT

Introduction: Microtia is considered as a congenital anomaly of ear manifested by a small, abnormally shaped auricle. It is usually accompanied by a narrow, blocked or absent auditory canal. This case report delineates the fabrication of an auricular prosthesis in an inexpensive innovative manner aiming to help lots of economically challenged patient.

Patient: A 25 yrs old male dental student reported to Guru Nanak Institute of Dental Sciences, Kolkata, and West Bengal, India having microtia of left ear.

Discussion: Fabrication of aesthetically acceptable ear prosthesis presents a unique challenge to a dental surgeon in the form of inexpensive palliative care.

Conclusion: The present article tries to illuminate an innovative inexpensive way of auricular prosthesis fabrication.

INTRODUCTION

The inexpensive fabrication of any extra oral maxillofacial prosthesis often imposes a challenge to dental surgeon. This is more problematic when the loss is congenital or unexpected malformation of human ear because of esthetic duplication and retention problem. Microtia is a congenital abnormality of ear, characterized by a small, unnatural shaped pinna accompanied by a narrow, absent or blocked auditory canal [1]. The pathogenesis of microtia is not very clear and may be hereditary in nature. Treacher Collins syndrome, trisomy 21 trisomy 18 and Goldenhar syndrome may manifest with microtia. The occurrence of microtia is more common in males than females [2-4]. A proper ear prosthesis not only delivers satisfactory esthetics but also enhances the psychosocial contentment to the patient.

Outline of the case

A 25 -year-old male student, complaining of a non aesthetic appearance due to malformed left ear till birth come our department (Fig. 1-3). On examination small rudimentary ear was present in left ear region. Patient's right ear was normal and having normal hearing ability. There are no other associated features of any syndrome found.

Fig. 1 The patient having microtia in left ear

Fig. 2 Normal right ear

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Fig. 3 Microtia in left ear

An impression of both normal and malformed ear was made with the assistance of irreversible hydrocolloid impression material. An innovative special impression tray was made by modifying readily available polyhedral disposable plastic glass (Fig. 4-7). This step helps us in easy and undistorted removal of impression material from the ear.

Fig. 4 Polyhedral disposable plastic glass

Fig. 5 Irreversible hydrocolloid impression material

During impression making of normal ear the external auditory canal was covered by a firm cotton plug [5] then the impression was poured with type 3 dental stone (Fig.8). Then wax pattern was made by perfectly measuring the normal ear base, mesio distally and superio inferiorly as well as the architecture of the normal ear is also maintained but in a reverse manner (Fig. 9). Then acrylization done with clear acrylic modified by acrylic poster colour (Fig. 10-11).

Fig. 6 Impression making

Fig. 7 Irreversible hydrocolloid impression of both ear

Fig. 8 Cast of both right and left ear

Fig. 9 Wax pattern

This is the second and simple innovation which can be easily performed in any case depending upon skin colour of the patient.

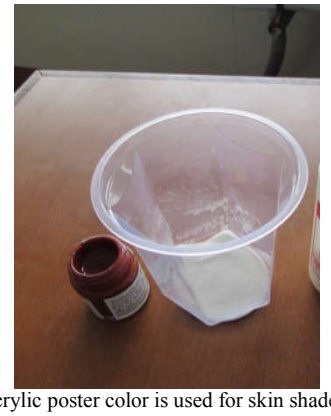

Fig. 10 Acrylic poster color is used for skin shade matching

Fig. 11 Fabricated untrimmed ear prosthesis

Fig. 12 Incorporation of simple stainless steel press button (push button) into the handle spectacles and back side of the prosthesis

Fig. 13 Finished and articulated prosthesis

Fig. 14 Placement of ear prosthesis

Fig. 15 Close view of ear prosthesis

Then the prosthesis is finished and polished properly. The 3rd innovation was made with the help of incorporation of simple stainless steel press button (push button) into the handle of spectacles and back side of the prosthesis so that the prosthesis can be properly fitted in the desired position (Fig. 12-15).

DISCUSSION

Fabrication of aesthetically acceptable ear prosthesis, its acceptance & subsequent adaptability to an individual presents a unique challenge to a dental surgeon in the form of inexpensive palliative care. In 1960 Cicero B.V. used elastic

rubber for support of prosthesis containing acrylic resin intrinsic pigment. In 1967 Arturo Santiago used double faced tape for retention of prosthesis made up of vinyl resin. The advantage of our ear prosthesis is 1. Better duel retention-one with the help of retained rudimentary ear structure and second with the help of press button which is inexpensive and readily available in the market. 2. Can be properly planned, 3. All other materials are easily available 4. Nearly exact colors match of skin with inexpensive acrylic color addition. 5. Durable, 6. Comfortable, 7. Near natural aesthetics, 8. Low cost, 9. Readjustable, 10. Simple procedure –requires minimum armamentarium.11 repairable.12. No need of buying and application of costly medical grade silicon adhesive. 13. User friendly. Disadvantage 1. Hard material, no soft resilient feeling. 2. Extra attachment is needed to hold the prosthesis 3. Little bit heavy.

CONCLUSION

It is very much effective for every economically challenged differently able individual who has microtia. It also preserves facial aesthetics, enhance social acceptance, and reorient self esteem of our distressed patient.

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