INTRODUCTION

Symes amputation has been performed since 1842 and since then have been major improvements of the surgical techniques. The advantages of the Symes amputation are many however frequently presents difficult management problems and the design of the prosthesis have been a constant challenge for prosthetists. Some of these problems are related to the anatomy of the amputation, where the distal end circumference is larger than some proximal circumferences making it difficult to done the prosthesis without windows on the socket. Traditional methods like pelleite inner socket with posterior or side windows have been widely used worldwide, making prosthesis very bulky resulting in a very poor cosmetic outcome.

Expandable inner sockets is not a new concept however very seldom use. Publications regarding this technique can be found dated 40 years ago ACPOC NEWSLETTER AND JOURNALS ICIB 1971 Vol 11, and although many steps remain the same few thing have changed to make it better.

The purpose of this presentation is to describe the fabrication procedures used in the fabrication in of an expandable inner socket (EIS) on prosthesis for the Symes amputation. These fabrication principles have been used successfully in fabricating prostheses in certain types of congenital anomalies, wrist, elbow and knee disarticulations. Full fabrication procedures will be described, anatomy of the Symes amputation will be reviewed and cases will be presented as well.

METHOD

Clinical and Technical Experience: The purpose of this presentation is to describe in detail all steps and procedures used in the fabrication of an expandable inner socket made of silicone on prosthesis for the Symes amputation.

Subjects: 4 prostheses have been fabricated at this facility with EIS 3 males, one female, with an average of 26.25 years old, with a media of 5’ 3” height and an average weight of 119.75 pounds; three of them sustained symes amputation due to trauma and one with knee disarticulation due to a congenital anomaly.

RESULTS

Four of the subjects presented demonstrated good ambulation, good suspension and excellent comfort. Some of the cosmetic problems have been improved compared with traditional prostheses.

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Table 1. Ø = Circumference. All circumferences are in cms.

DISCUSSION

The EIS suspension system is not technically difficult to fabricate, however requires defined steps to achieve good results and prevent system failure.

CONCLUSION

The expandable inner socket when used on appropriate amputees can provide a very practical solution for individuals with Symes and other level of amputation for upper and lower extremities.

REFERENCES

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