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A Technique to Precisely Determine Iris Size in Ocular Prosthesis using Button Measuring Scale

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Abstract

Prosthetically rehabilitating patients with ocular defects is an artistic challenge. Accurate simulation of the natural iris size in the ocular prosthesis is an essential step of fabrication. It requires precision and accuracy as the iris is the most visually appreciable part of the prosthesis. Therefore, a technique for objectively measuring the iris of the natural eye using a readily available and cost-effective button measuring scale has been described.

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1. Introduction

Standard measurement tools and methods primarily focus on positioning the iris correctly, often neglecting the importance of accurately reproducing the iris size.^{1,6} Matching the normal iris size in the prosthesis is crucial to

success. This technique focuses on measuring the size of the iris accurately between 7.5mm up to 25.5mm with the help of a button measuring scale, which is readily available and cost-effective.

Clinical Technique:

- Make a routine impression of the ocular socket.
- Create wax pattern for try-in.
- Measure the natural iris diameter with the button measuring scale as shown in Figure 1.
- Now to select a stock eye shell whose iris best matches this diameter and the iris color. Retrieve the iris (Figure 2,3,)
- Position the iris in the pattern (Figure 4) by using standard anatomical landmarks for reference. (Figure 5)
- Characterise, process, finish, and deliver as per norms. (Figure 6)

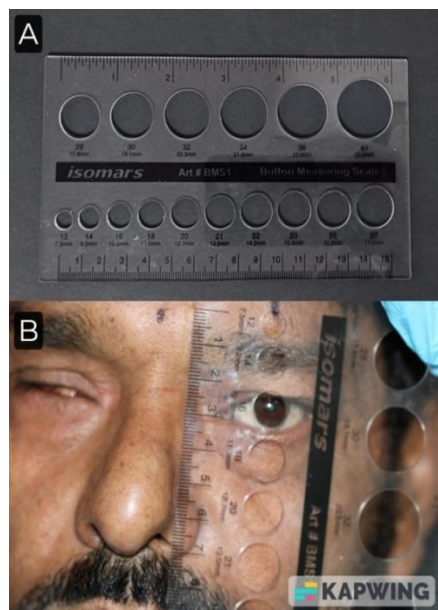


Figure 1:a.Button measuring scale b. Measuring iris diameter



Figure 2: Extracting the stock iris



Figure 3: Matching artificial iris size on scale



Figure 4: Iris in the wax pattern.



Figure 5: Final wax pattern in place



Figure 6: Final prosthesis in place

Discussion:

Various techniques for iris measurements exist, the most common of which are Grid template and digital photography methods. Digital photography was utilized by Dasgupta et al. to locate the iris by using a digital single lens reflex camera to take a clear portrait of his face with a flashlight reflected in the middle of the normal eye's pupil in the picture. The iris was measured using the image captured.¹

Guttal et al. utilized a grid template to measure the iris accurately, but this method requires an assistant to hold the graph and is subject to inter-observer error.⁷

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However, the present article technique has the advantage of not being technique-sensitive, is easily incorporable into conventional ocular prosthesis fabrication, and is cost-effective. The limitation of the technique device is that the iris diameter falling between these given sizes can only be estimated.

Conclusion

The button measuring scale can accurately and economically estimate natural iris diameter for optimum reproduction in an ocular prosthesis.