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Surgical Management of Lagophthalmos with Gold Pessary

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ABSTRACT

Gold weight implantation is a widely used surgical technique for managing lagophthalmos caused by facial nerve paralysis. This procedure involves placing a gold weight in the upper eyelid to facilitate passive closure, thereby protecting the cornea from exposure-related complications such as keratitis and ulceration. Advancements in implant design, such as elliptical shapes with suture holes for enhanced fixation, have reduced complications like migration, extrusion, and infection. Techniques including retrograde implantation and supratarsal fixation further improve placement accuracy and reduce postoperative morbidity.

Despite its efficacy, long-term complications such as implant migration, cosmetic concerns, ptosis, and infection may arise, highlighting the importance of careful surgical planning and patient-specific approaches. Adjunctive measures, such as fascia lata grafts, have been shown to improve implant stability and minimize the need for revision surgeries.

Gold weight implantation remains a reliable and effective solution for restoring eyelid function in patients with facial nerve paralysis, with continued refinements in techniques and materials contributing to enhanced functional and aesthetic outcomes.

KEYWORDS: Gold weight implantation, lagophthalmos, facial nerve paralysis, eyelid closure, corneal protection, retrograde implantation, supratarsal fixation, fascia lata graft, complications, ocular surgery.

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INTRODUCTION

The surgical management of lagophthalmos using a gold pessary, or gold weight implantation, is a well-established technique for addressing eyelid closure issues due to facial nerve paralysis. This procedure involves placing a gold weight in the upper eyelid to facilitate passive closure, thereby protecting the cornea from exposure-related complications such as keratitis and ulceration.

The literature highlights several techniques and considerations for optimizing outcomes and minimizing complications associated with gold weight implantation. Choi et al. describe the use of a newly designed elliptical gold

implant, which showed improved outcomes over the conventional rectangular design, with reduced rates of infection and implant exposure.[1] This design is tailored to fit the curvature of the eye and includes features to enhance fixation, such as holes for sutures and fibrous tissue ingrowth. Kao and Moe introduced a retrograde implantation technique, which involves placing the weight postlevator aponeurosis. This method aims to improve the accuracy of weight placement and fixation, reducing complications such as migration and extrusion. Their study reported no surgical failures or perioperative complications, suggesting that this approach is both effective and cosmetically favorable.[2]

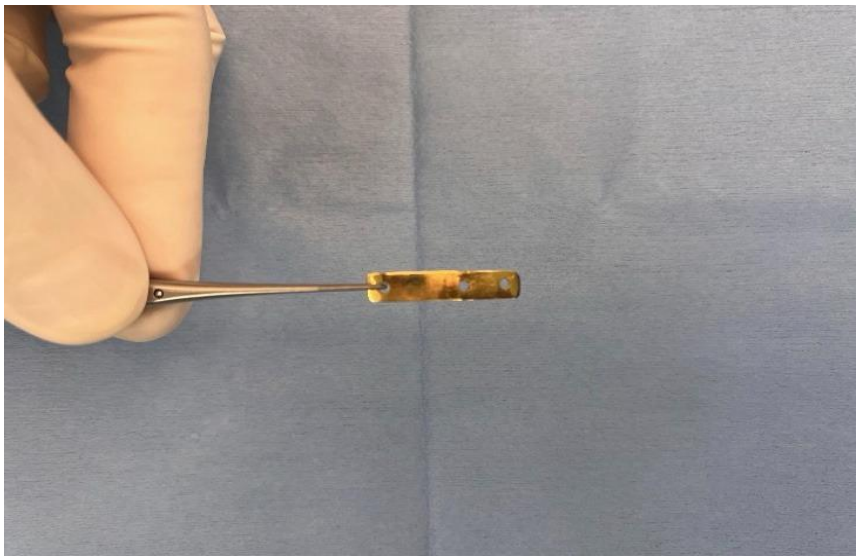

Figure 1. gold pessary

Misra et al. emphasize the importance of supratarsal fixation in reducing postoperative morbidity, such as implant ulceration and extrusion. Their findings support the efficacy of gold weight implantation in treating lagophthalmos while highlighting the benefits of specific fixation techniques.[3]
Baheerathan et al. report on their experience with gold weight implants, noting a high rate of patient satisfaction and effective eyelid closure. They also discuss the demographic characteristics of their patient population, which predominantly consisted of older males undergoing radical parotidectomy.[4]

In terms of complications, Bulam et al. address issues such as migration and extrusion of the gold weight implant. They propose the use of a fascia lata sandwich graft technique to manage these complications, which involves wrapping the implant to enhance stability and reduce revision rates.[5]
Overall, the surgical management of lagophthalmos with gold weight implants is effective, with various techniques available to optimize outcomes and minimize complications. The choice of technique may depend on patient-specific factors, including the severity of lagophthalmos and the presence of any complicating factors.

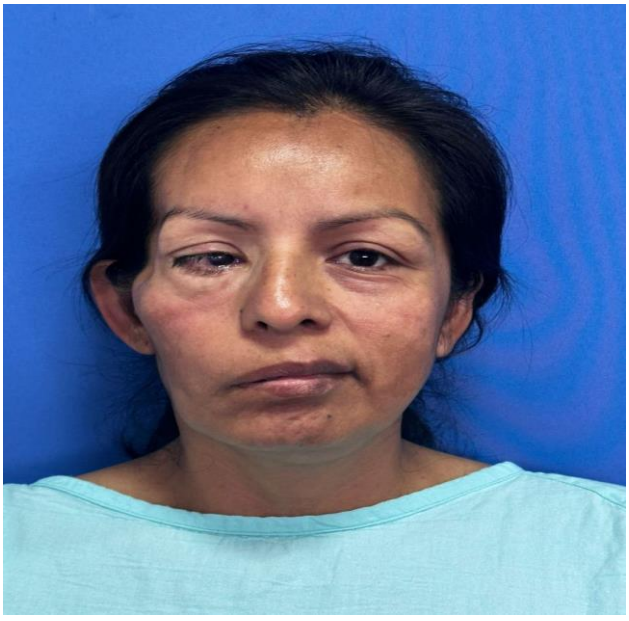

Figure 2. Preoperative image

Long-term effects

Gold weight implantation for managing lagophthalmos can have several potential long-term effects on eyelid function, particularly when considering techniques like fascia lata grafts to reduce complications. The primary goal of gold weight implantation is to improve eyelid closure in patients with facial nerve palsy, thereby protecting the cornea from exposure-related damage. However, the procedure is not without potential complications.

Long-term effects and complications associated with gold weight implantation include:

1. **Migration and Extrusion**: Gold weights can migrate or extrude over time, leading to the need for revision surgery. The use of fascia lata grafts, as described by Egemen O et al., can help mitigate these issues by providing a durable barrier that reduces the risk of implant migration and extrusion.[6]
2. **Cosmetic Concerns**: Patients may experience poor eyelid contour or prominence of the implant, which can be cosmetically unsatisfactory. This is a common reason for revision surgeries, as noted in studies that have evaluated the outcomes of gold weight implants.[7, 8]
3. **Infection and Inflammation**: Although less common, infections can occur, sometimes without extrusion of the implant. Inflammatory reactions, possibly due to gold allergy, have also been reported, necessitating careful monitoring and management.[9]
4. **Ptosis and Eyelid Function**: The weight of the implant can lead to ptosis or drooping of the eyelid, which may obscure vision. This is particularly a concern if the weight is too heavy or improperly positioned.[10]
5. **Corneal Protection**: Despite these potential complications, gold weight implants are generally effective in maintaining corneal integrity by facilitating eyelid closure, which is crucial for preventing exposure keratitis and other corneal complications.[10]

Overall, while gold weight implantation is effective for managing lagophthalmos, careful surgical technique and the use of adjunctive measures like fascia lata grafts are important to minimize long-term complications and optimize functional and cosmetic outcomes.

Figure 3. Postoperative image

CONCLUSION

Gold weight implantation remains a well-established and effective surgical solution for managing lagophthalmos resulting from facial nerve paralysis. By facilitating passive eyelid closure, this technique provides critical corneal protection and prevents exposure-related complications, such as keratitis and ulceration. Advances in implant design, such as elliptical shapes and fixation-enhancing features, have improved outcomes by reducing infection and extrusion rates. Techniques like retrograde implantation and supratarsal fixation further optimize placement accuracy and minimize complications, ensuring both functional and aesthetic benefits.

While generally effective, gold weight implantation is not without potential long-term complications, including implant migration, extrusion, infection, ptosis, and cosmetic concerns. Adjunctive measures, such as fascia lata grafts, can mitigate these risks by enhancing implant stability and reducing revision rates.

Ultimately, the success of gold weight implantation depends on careful patient selection, meticulous surgical technique, and individualized approaches tailored to the severity of lagophthalmos and any complicating factors. With continued refinement in techniques and materials, this procedure will remain a cornerstone in the management of facial nerve paralysis-related eyelid dysfunction.

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