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Chalazion Forceps-An Instrument Used for Mucocele and Biopsy of Oral Lesions: A Literature Review

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ABSTRACT

Surgical excision of a mucocele and oral biopsies are common diagnostic and therapeutic procedures in oral and maxillofacial surgical (OMFS) outpatient departments. In this review, we have explored the usage of chalazion forceps for these procedures and highlighted the history, benefits and the technique of using this simple, widely-available tool, which increases effectiveness and efficiency for the clinician and assistant.

Key words: Biopsy, Chalazion foreceps, Lesions

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INTRODUCTION

Biopsy, a Greek-derived word (bio-life; opsia-to see) loosely translated as "view of the living," is defined as removal of tissue from the living organisms for the purpose of microscopic examination and diagnosis [1]. A biopsy is indicated in application to any lip or oral mucosal lesions following the exclusion of local irritants (of traumatic or inflammatory origin), when the lesions in question are seen to persist for more than two weeks, and may be suggestive of malignancy [2]. Mucocele is a common salivary gland lesion that results from mucous accumulation and its conventional treatment includes the surgical extirpation of the surrounding mucosa and glandular tissue down to the muscle layer [3].

The oral mucosa can easily move, and an assistant may need to stabilize the area by using an instrument or his or her fingers. Stabilization and traction techniques will depend on the anatomic area being treated within the oral cavity (lips, tongue, or buccal mucosa) [4]. Chalazion clamp is an instrument helpful for surgical procedures on oral mucosa as these tissues are moist, vascular, and pliant. We describe the use of the chalazion clamp in performing oral, tongue and inner lip biopsy in various dermatological disorders as well as its use as a tool for therapeutic purposes [5]. With a rich case bank established over 3 decades we have been able to publish extensively in our domain [6–16]. Based on this inspiration we aim to explore the usage of one type of chalazion forceps, an ophthalmologic instrument, which has been adapted to be used in oral biopsy procedures and the surgical excision of mucoceles and other oral lesions. Its use, limitations and advantages are discussed in this respect.

History

The chalazion clamp was originally designed by a French ophthalmologist, Louis-Auguste Desmarres (1810–1882) to surgically remove a chalazion, hence known as a chalazion clamp [5,17]. Chalazion is a cyst of the meibomian glands (sebaceous follicles between the tarsi and the conjunctiva of the eyelids) [18]. The procedure was performed by securing the lesion with a chalazion clamp, everting the eyelid, opening the conjunctiva over the lesion with a

scalpel, and curetting out the granulomatous substance inside [19]. In 1970, Garcia and Davis demonstrated the use of a chalazion clamp to assist small dermatological procedures in their daily practice.It was a simple tool used in surgery to manipulate tissues that are difficult to immobilize [20]. Thus to improve handling and hemostasis, surgeons started using one of the several specially designed clamps and modified its use in dermatology and oral surgery for ear lobe piercing and repair, scrotal surgeries, nasal lesions on alanasi and also for oral mucosal and minor salivary gland biopsies as well excision or deroofing of mucoceles [20,21].

About the instrument

Chalazion clamp has a forceps-like handle with one distal tip with a flat solid oval plate and another distal tip with a ring-like aperture. The shaft has a thumbscrew, which can be tightened to bring the distal tips together [5]. Chalazion clamps can be disposable or reusable and are commonly available in three sizes, small (ring size: 11 × 17 mm), medium (ring size: 12 × 23 mm) and large (ring size: 17 × 28 mm) [22]. Small disposable or reusable chalazion clamps are also used, as it encloses sufficient area to take an incisional or punch biopsy [5]. Welborn et al. [18] stated that a type of the chalazion forceps, Desmarres, has been found to be extremely well suited to use during the removal of several oral lesions.

Bermejo-FenollLo´pez-Jornet et al. [4] designed a surgical steel forceps (B forceps) based on a chalazion clamp (Moria Dugast, Paris, France) to control excessive bleeding leading to poor visibility. They stated that the original instrument was designed as an ocular forceps and is fitted with a screw to apply pressure. The new instrument is longer (20 cm) and the active end consists of two flat plates, between which the tissue is trapped with a pressure of 1 kg/ cm2. One of the flat blades has a round opening (1.7 cm in diameter), through which the lesion is to be exposed. The new forceps does not slip because of the low raised rim around the side of the aperture in contact with the tissue and the long handle enables greater stability and control. Another modification of the chalazion forceps is the modified Harvey chalazion clamp which has a concave open portion rather than convex open portion of the traditional chalazion clamp. This modified version mimics the natural concavity of the eyelids and the oral mucosa [5].

Surgical technique

Local Anesthesia

After informed consent, a 20% benzocaine paste is applied [23] followed by local anesthesia (field block) using lignocaine and adrenaline is injected by infiltration or in a field around the proposed biopsy site using a 30 gauge needle. Sampling of tissues at the site of the local anesthetic will produce artifactual tissue edema or distortion [24].

Application of the Forceps

Chalazionforcep is then chosen depending on the size of the lesion. The lower lip is everted and the Chalazion forceps applied by placing the ring portion of the forceps facing the mucosal surface, where as the other flat side of the forceps should be on the cutaneous surface [5]. Then, the clamp is tightened, which allows good retraction of the lower lip, eversion of the minor salivary glands and eliminates bleeding with applied pressure [23]. Forceps compression induces a fluid depletion effect, thus allowing surgical removal under local ischemic conditions. Furthermore, compression causes the sectioned portion (detached from its peripheral connective attachments) to be propelled like a plug of tissue thereby facilitating depth appraisal and access to the base for adequate sectioning [4].

Excision of the tissue

The lesion to be removed appears exposed in the fenestrated window. An elliptical incision (1 cm long, 4 mm wide) made horizontally and away from the midline. Lobules of the minor salivary glands are easily identified because of the pressure created by the Chalazion forceps and protrude toward the surface [25]. Daley et al. [26] stated that at least five glandular lobules are to be removed. Also, the biopsy can be taken using punches of different sizes based on the requirement [5]. Care must be taken to avoid injuring the arborized neural fibres of the mental nerve [23].

Suture

Hemostasis should be achieved by applying small gauze pads to the area followed by removal of the chalazion clamp by loosening the screw. Absorbable suture using 3-0 plain or chromic catgut should be used [26]. Savant et al. [27]

has also recommended stay suture to be taken for the lesion prior to beginning the biopsy procedure. Bermejo-FenollLo´pez-Jornet et al. [4] mentioned the reopening of inadequately closed wounds in this movable and highly vascularized organ, resulting in oozing and/ or delayed healing. They also stated the use of cautery in case of a large vessel bleed.

Indications

Chalazion forceps has been documented to be used in performing oral, tongue and inner lip biopsy in various dermatological disorders [20], ear lobe repair, scrotal surgery, and nasal lesions on alanasi [5]. It has been routinely used for incisional and excisional biopsies for lesions of the tongue, labial and buccal mucosa [28] as well as for minor salivary gland biopsy in Sjogren's syndrome and for the diagnosis of amyloidosis [23].

Advantages

Surgical procedures of the oral mucosa come with a degree of difficulty as these tissues are moist, vascular, and pliant. It is also associated with excessive bleeding which obscures the field of vision of that particular area [5]. The use of the Chalazion forceps causes temporary vascular compression, which improves visibility and negates the need for suction, bipolar diathermy or assistance giving the surgeon excellent hemostasis [23]. The screw clamp allows variability of the pressure exerted, allowing hemostasis without crushing the tissues [5]. Bermejo et al. [4] states the forceps compression induces a fluid depletion effect, thus allowing surgical removal under local ischemic conditions.

In addition, this instrument provides a convenient means of retraction during an oral biopsy. The ovoid shape of the chalazion forceps conforms, in general, to the outline of the elliptical incisions [18]. The compression effect created by the forceps allows extrusion of the minor salivary glands allowing ease of surgical access to the biopsy area. It also provides a firm immobile surface against which the lesions can be incised maintaining a firm grip on the moist slippery oral mucosa. The clamp handle helps to hold and operate at the same time allowing easy manipulation of the surgical site during surgery.

The time needed for the surgical procedure is also shortened because the ischemia produced increases the stability of the tissue and visibility, leading to faster dissection. It decreases the risk of damaging structures such as the labial branch of the nerves well. It has been possible to maintain the chalazion forceps in position for as long as 30 minutes without observing signs of unusual postoperative edema [18].

Another advantage of the chalazion forceps useful in a biopsy procedure is the convenience with which tissues may be sutured before fully releasing the forceps. In those instances when this is desirable, the tourniquet effect of the clamp is partially released to facilitate placement of sutures. Should it be necessary, small bleeding vessels can be ligated immediately before closure of the wound [18].

Also, the newer chalazion B forceps have a longer active part and handle, together with the auto pressure applied, avoids the classic screw of the chalazion forceps. It is also easier to manipulate and can easily be positioned and removed by the operator or assistant [4].

CONCLUSION

One of the criteria for assessing the degree of difficulty in a surgical procedure is the ease of surgical access to the site, which is determined by the ability to see, reach, and stabilize it. The chalazion forceps simplify, homogenize, and ease biopsy of minor salivary glands as well as other areas of the oral mucosa. The forceps induces a temporary vascular compression, thus permitting work under ischemic conditions and better visibility. The time needed to complete the procedure is considerably reduced requiring minimal assistance and maximum efficiency thus helping surgeons in their daily practice.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest

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