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Dispensing for facial disfigurement

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In practice, patients can present with atypical facial characteristics, which demand more time, skill and attention from the dispenser. This article explores the considerations and potential solutions in order to achieve a successful dispensing outcome for patients with facial disfigurement.

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General Optical Council
Approved CET For Optometrists

Learning objectives

To be able to ask appropriate questions to establish the patient's dispensing needs (Group 1.1.1)
To be able to recognise and take into consideration the specific needs of patients (Group 2.1.3)
To be able to dispense optical appliances to patients with specific needs (Group 4.1.5)

COMMUNICATION
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OPTICAL APPLICANCES

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Approved CET For Dispensing Opticians

Learning objectives

To be able to ask appropriate questions to establish the patient's dispensing needs (Group 1.1.1)
To be able to recognise and take into consideration the specific needs of patients (Group 2.1.3)
To appreciate the implications of anatomical variation when dispensing optical appliances (Group 4.5.1)

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About the author

Sally Bates is a dispensing optician and lectures at ABDO College where she is responsible for teaching all elements of the professional practical examinations, and theory in communication skills. She is the proprietor of Identity Optical Training, offering courses for all sectors of the optical profession.

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Figure 1 Ptosis prop

Figure 2 Lundhi loop

Figure 3 Silicone frame with loop end sides

Introduction

The practitioner is trained to utilise their frame selection skills in order to achieve the best fitting results whenever possible for the spectacle wearer. This includes the practitioner's observation skills of facial structure and recognition of abnormal ocular conditions, facial prosthetics and dispensing of patients with asymmetrical features. As with any frame fitting, it is essential to look at the patient and ask ourselves 'how are we going to fit this frame?' Careful assessment of eye position and brow profile, along with ear alignment, is the key to successful frame fitting for all patients but especially for those with atypical facial characteristics.

Frame modifications

Problems relating to disfigurement may not simply be ocular; a deformity could possibly exist in more than one facial plane. For example, in the case of a patient with Bells palsy, the signs can be ptosis, a facial droop with pain caused by the swelling or damage to the trigeminal nerve, headaches, or the inability to make facial expressions due to a paralysis of the facial nerve. Such dispensing may require spectacle frame modification to improve both the fitting and comfort for the wearer. This possibly will involve fitting a ptosis prop (see Figure 1) or lundhi loop (see Figure 2).

Successful results are more likely to be achieved if either device is fitted to a plated metal frame, rather than plastic frames which slip easily on the nose, thereby rendering the appliance ineffective. Prior to order, the metal frame should be pre-adjusted and fitted with silicone nose pads to minimise slipping; this allows accurate measurement to be taken from the back rim of the frame to the patient's orbit, providing the necessary dimensions for the ptosis prop.

Plated metal frames can be easily soldered, whereas titanium and memory metal frames require laser soldering, which is expensive. Aluminium frames are made from single components and cannot be soldered or welded, therefore, attachment of a prop or loop is not possible. However, a thick-rimmed plastic frame has the benefit of protecting the patient from dry eye conditions and photophobia, symptoms often associated with Bells palsy. In addition, side shields can be fitted to protect against wind and dust damage to the cornea; curl sides may be added to achieve a close frame fitting. A lundhi loop is an ideal optical appliance for patients suffering from facial paralysis affecting both the upper and lower lids. It may be covered with nylon tubing, which is frequently used for hearing aids, to protect the patient's skin from the nickel component of the loop.

Complete understanding of the patient's condition will ensure the most successful dispensing outcome. For example, Down's syndrome patients have larger than average heads at birth, typically changing by only 5mm throughout adolescence and, therefore, as a child they have a head width similar to adults. Their facial features are distinctive. For instance, the nose has a flatter bridge, lower crest and a generally shorter length to bend when compared with other children; these points must be carefully considered when selecting the ideal frame. Metal is the preferred frame material for these patients to allow easy readjustment if the spectacles become misshapen through wear and tear; the sides can also be shortened, be converted to curl sides for active children, or loop end sides for the very young.

Standard ready-made curls are available which are easily fitted in practice. They are simply attached by pushing on to a shortened side by allowing for the length to bend measurement plus 5mm. However, it is important to note that if the curl is pulled off through misuse, this will expose a sharp metal point that may be a potential hazard. A simple method of measuring the correct length for a curl side is to use a piece of string or supra cord.

Pre-adjustment of the frame is essential,

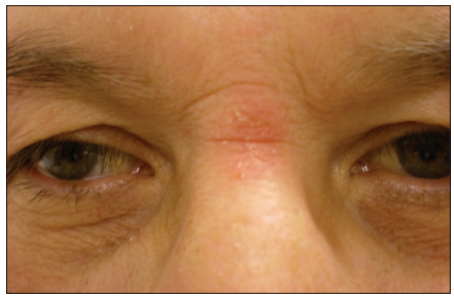

Figure 4 Contact dermatitis on the crest of the bridge caused by wearing a nickel alloy frame

Figure 5 Basal cell carcinoma

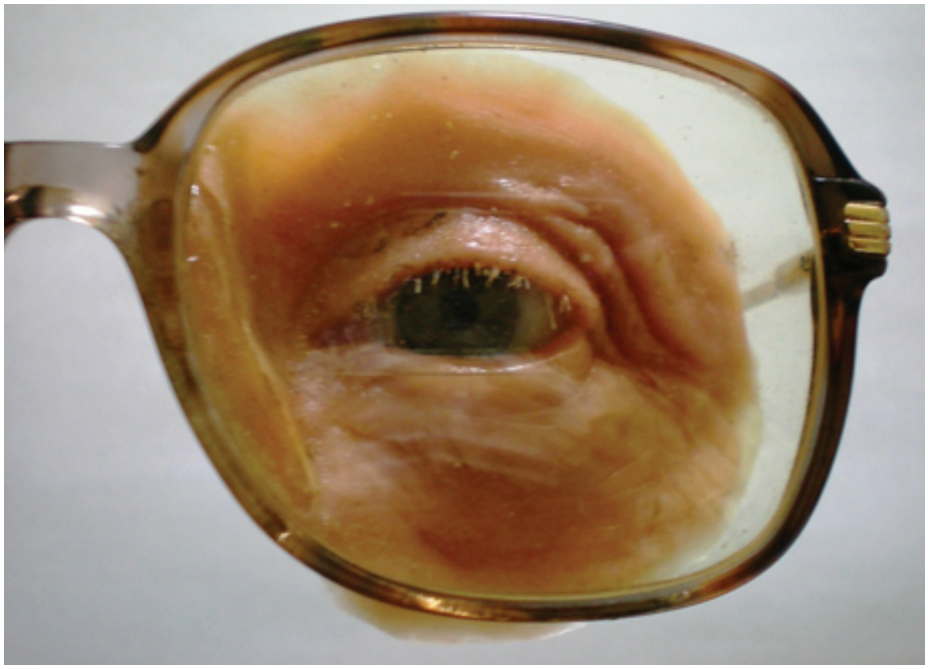

Figure 6 Facial prosthesis

including assessment of the vertex distance, angle of side, head width and length to bend. The piece of string or supra cord should be measured from the dowel point (side screw) around the ear to the desired position of the curl. This provides the measurement of the total length of side, which can subsequently be reduced by the length to bend measurement, thus providing the required length of curl.

Peer opinion suggests that it is not recommended to fit a child less than two years of age with curl sides, as the ear cartilage is not fully developed. Further, curl sides that are fitted incorrectly can result in the child's ears protruding. The ideal dispensing solution for these patients is to fit loop end sides. Elastic or silicone ribbon can be threaded through the loops, thus enabling a secure frame fitting (see Figure 3).

Frame materials

Using a variety of frame materials is essential to ensure comfort for a broad range of patients. Titanium, gold (approximately 12 carat) and pure stainless steel are hypoallergenic metals, unlike frames containing nickel which commonly produce a dermatological reaction (see Figure 4).

Other metal frames are alloys, which may contain nickel, including plated materials such as Monel, rolled gold, and flexible 'memory' metal frames, which contain a base metal comprised of nickel, copper, manganese and zinc.

Although plastic spectacle frames are thought to be generally suitable for patients with sensitive skin, cellulose acetate frames can develop a rough, matt surface after prolonged wear and contact with the skin.[1] In certain patients, wearing a nickel frame produces a form of dermatitis although some types of synthetic plastic materials can produce similar effects.[2] Injection moulded plastics frames such as propionate, SPX (Silhouette) and Optyl (Safilo) are smooth materials, less abrasive than acetate and are lightweight, making the spectacles more comfortable to wear.

Spectacle frames do not contain carcinogenic substances, therefore, tumours of the nasal bearing surfaces cannot be due to chemicals, but could be initiated mechanically.[3] Plated metal spectacle frames can be coated with a clear lacquer to provide protection from the nickel content, however, the duration of protection depends upon the patient's skin. Manufacturers recommend re-lacquering after six months. If the associated problem is located at the temples or ear points, shrink-wrap tubing is available and can be easily fitted to the frame sides.

Skin conditions

It is important that the practitioner is aware of skin disorders that may be affected by the spectacle frame fitting and also referring patients if pathology of the adnexa is noted. This includes serious conditions such as basal cell carcinoma, apparent as a painless skin-coloured, hard nodule with a pearly appearance, sometimes with a raised rolled-border, surrounding a central ulcer, which may bleed (see Figure 5). Ocular symptoms, including those of systemic conditions, such as keratitis and iritis, can be reduced with careful dispensing. A large, close fitting frame, perhaps with side shields, can protect the eye from dust and wind. Prescribing a suitable tint can help reduce any photophobia.

Irritation caused by poor frame fitting can exacerbate skin problems. For example, if the spectacle frame aggravates facial cysts, they will discharge a keratin substance, which can lead to bacterial infection. Consequently, the correct pad fitting is essential. The use of various sized and shaped nose pads will provide a comfortable fitting by distributing the weight of the spectacles evenly on the wearer's bridge. Silicone pads and saddle bridges are hypoallergenic and available in a variety of fittings. Consideration should be given to fitting small round pads to prevent further irritation on facial carcinomas and cysts.

The practitioner should always be prepared to dispense a bespoke spectacle frame to enhance the fitting, comfort and cosmetic appearance for the individual patient where stock frames are unsuitable. Although this is not a frequent request, given the broad range of frames at the practitioner's disposal, custom design may be required if the patient has abnormal facial characteristics, such as a

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broken nose, a facial prosthesis, or they simply require a copy of a frame in a non-standard colour, eyesize or bridge fitting.

Prosthetics

Prosthetic appliances are generally dispensed by the Hospital Eye Service following a specialist consultation and may vary from an artificial eye, to a false nose, ear or periorbital area. Skin prosthetics are generally made from a form of latex and a mix of silicone, and in the case of a false ear, nose or periorbital area can be attached by implanted magnets to the skull. For those wearing spectacles, attention to detail is essential. Ideally, skull grip sides commonly dispensed for sports such as cycling and golf offer the best fitting for those individuals with a false ear. In the case of a periorbital facial prosthesis, the appliance is often attached to the spectacles (see Figure 6); therefore, the frame fitting and any subsequent adjustments are imperative to prevent the frame from slipping.

Spectacle lenses

Spectacle lenses that enhance the wearer's visual and physical comfort are obviously a crucial element of dispensing. Freeform, tailor-made progressives are the most suitable lens design for monocular patients to aid their distance and near vision requirements. Generally, monocular patients experience reduced convergence and often find near vision tasks difficult when wearing standard progressive lens designs, potentially resulting in a non-tolerance case. Freeform lenses are designed to the patient's specific requirements, including their working distance, and provide the exact inset required for the individual, thus aiding the patient's near vision performance. Consider ordering a high cylinder power for the balance lens. This can make the prosthesis appear as though there is a slight movement as the patient turns their head. Dispensing lightweight polycarbonate lenses improves comfort and safety, vital for monocular patients and those with sensitive skin complaints.

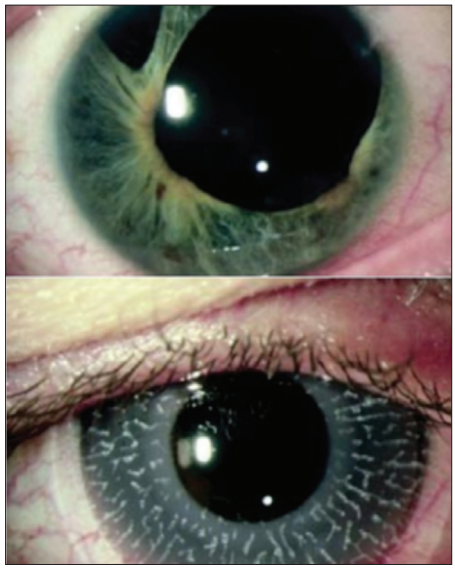

Figure 7 A cosmetic contact lens dispensed to disguise the appearance of a misshapen iris

Photophobic patients, for instance albinos and those suffering from iritis and keratitis require the use of tints and filters to enhance their vision. Albino patients have little control over light adaptation; therefore, a fixed tint is more beneficial than photochromic lenses, which may not provide adequate light protection indoors. Further, a tint can disguise the effects of nystagmus, which is frequently associated with this condition.

Contact lenses

Contact lenses are available for the cosmetic enhancement of ocular conditions such as coloboma, heterochromia, aniridia and those resulting from severe eye injuries. This includes the fitting of cosmetic contact lenses, some with full or partial opaque backing soft lenses (see Figure 7) and cosmetic scleral lenses. In the case of coloboma, the effect of the unusual pupil shape produces an unwanted cosmetic appearance, and painted opaque soft contact lenses are an ideal solution to enhance the cosmetic appearance while simultaneously reducing photophobia.

Conclusion

Dispensing for facial disfigurement can be a challenging but rewarding task for the practitioner. Dedicating time and taking a common-sense approach will provide the best outcome with an opportunity to provide a significant change to the quality of life for these patients.

MORE INFORMATION

References Visit www.optometry.co.uk/clinical, click on the article title and then on 'references' to download.

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