Orbital defects after malignant tumor removal represent a major problem for satisfactory reconstruction. Treatment and surgical reconstruction according to the regular surgical protocol improves with each new case contributing to continuous improvement of surgical techniques in order to achieve better reconstruction of the defect. In our modification in 20 patients there was presented a new method of reconstruction of the defect where the orbits included also a part of the muscle (sternocleidomastoid muscle) for better stabilization at the desired position on the immediate ocular prosthesis installation site in order to quickly overcome the postoperative defect after orbital exenteration. Application of modified temporoparietal slice gives good functional and cosmetic results, and is recommended to be used for reconstruction of defects after orbital exenteration. Key words: orbital exenteration, secondary composite temporoparietal lobe.

1. INTRODUCTION

The method of transposition - the reconstruction with the secondary composite temporoparietal slice (SCTS) is very suitable technique for the reconstruction of the ocular cavity. However, in the application of this technique there are the two significant interconnecting factors: a) length temporal artery, and b) the size of the orbital defect (1). If the defect is too large or too much to the medial side, the procedure could not cover the entire surface along the eye cavity (2, 3).

Eye cavity reconstruction by using skin or mucous membrane transplant or overlap is generally difficult due to the healing of incisions and deformity for the donor. The ideal reconstruction should be done in areas with no hair because due to the minor deformity to the donor. It also achieves a sufficient amount of surface area for adequate prosthetic reconstruction (4).

2. METHOD OF SURGICAL TREATMENT

Measurements are made from medial canthus toward the farthest point of the surface of temporal muscles and blood vessels, just above the zygomatic arch in order to determine the required length. The skin is opened by preauricular incision. The incision is gradually spreading to 6-8 cm upwards in order to identify the arteries and veins beneath the temporoparietal muscle fascia. By careful preparation, use of magnifier, while preserving the vascular component temporoparietal fascia is separated in form of hand held fan (5). Slice and the vascular component are carefully lifted and directed downward to see if they are properly positioned under the anticipated part of the skin and leaning on a specific area of upper parts of the sternocleidomastoid muscle. For these reasons the slice must be of maximal length (6). Rotation arc for practical use is from 180 to 206 degrees (7). The desired ellipse of skin is left for case of direct closure so that the head is moved and palpated to find the appropriate place marked in the transverse or vertical direction. Three sides of the skin may be raised as a guide for connecting preauricular section (8). Taking into account the histological features, wide spread of the capillary network of temporal fascia and the rapid permeation of the surrounding soft tissue structures that is implemented in the capillary buds, we came up with the idea that the slice include the subcutaneous adipose tissue and part of the sternocleidomastoid muscle. In this way is obtained a lot of filling for the post-operative empty orbital space.

This is our small contribution to the modification of the above methods which as such for some time been common as a secondary pedicle fasciocutaneous slice, which we applied in twenty patients.

Three weeks after this procedure carefully is lifted a complete layer of the skin to the subcutaneous layer and release together with vascular petals. Preauricular cut is then opened and prepare toward the lateral corner of the eyelid. Variations in the exact location and size of the skin disk can be determined by the amount of skin needed to encircle the defect, the amount of skin without hair, which is immediately available and how much can be removed while still allowing direct suture.

3. CASE REPORT

Girl aged 9 years with orbital tumor of mesenchymal origin, treated with chemotherapeutics. After the second
last chemotherapy surgery is performed in terms of orbital exenteration and partial resection of the bony orbital frame. After three weeks the reconstruction of the orbit was done by secondary temporoparietal slice and during the surgery was set the immediate eye prosthesis. We get the impression of ideally formed cavity for the prosthesis so that was difficult to discern which side was operated. After removing the sutures the immediate prosthesis is replaced by another that is also temporary in order to overcome tissue contractures, which was applied in prosthesis cavity. Three months after this permanent eye prosthesis will be placed and in the coming period there is a possibility of additional reconstructive surgeries in terms of setting up of various fillers in the periorbital area and possible fascial myoplastics by temporal muscle to provide better movement of the eyelids.

4. DISCUSSION

Surgical procedure provides the possibility of early prosthetic rehabilitation. During the period of three weeks two surgical procedures are carried out immediate eye prosthesis is placed. In this way young patient is fully resettled and does not experience psychological trauma and after one month (beginning and end of treatment) may be included in the normal life (school work, etc.). There is no need for camouflage sunglasses, experiencing stress or the young patient undergoing different psychological problems. In the course of further growth and development by the small corrective reconstructive surgeries can be achieved even better quality in aesthetic and functional sense (above mentioned periorbital filler, functional surgery on the eyelids, eye rhyme leveling, etc.)

5. CONCLUSION

According to available data from biomedical journals that deal with this topic this method of temporoparietal slice transposition is not described. Our experience, based on treatment of 20 patients and the results we have achieved in the reconstruction of the postoperative orbital defect can give us the right to suggest this method as a standard for future applications in the reconstruction of these types of orbital defects - preparing cavity for the eye prosthesis.

Conflict of interest: none declared.

REFERENCES