THE EVOLUTION OF THE POST-SURGICAL PARESIS OF THE FACIAL NERVE UNDER TREATMENT WITH NIMODIPINE IN A CASE OF MADELUNG DISEASE

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Abstract: *We present a Madelung disease case which affected in its progressive evolution the cervical anterior, submadibular, occipital and bilateral parotid areas. The excision of the lipoma located in the parotid area involved the dissection of the temporal zygomatic branches of the facial nerve which resulted in their different degree post-surgical paresis. We monitored the evolution of the paresis after the intake of nimodipine for 7 days immediately after the surgery, noticing total remission of the paresis 6 months later.*

INTRODUCTION

The multiple symmetric lipomatosis (benign symmetric lipomatosis, Mandelung disease, Launois-Bensaude syndrome) (1,2) is a clinical entity characterised by painless, symmetric fat masses (3), localised in different parts of the body.(4) According to the anatomic localisation, Donhauser et al. divided the benign symmetric lipomatosis in 3 types.

The Madelung disease equals to type I: the fat masses are localised in the cervical and facial region (2), where the lipomatous mass sediments on the parotid, submandibular, lateral cervical and occipital areas, having a bilateral character.(5) Type II is the "pseudoathletic" type: the fat masses are localised at the level of the shoulders and on the back of the trunk. Type III is the gynaecoid type: the fat masses are localised at the pelvic girdle (hips and thighs).(2) This syndrome was first described by Benjamin Brodie in 1846.(4,6) In 1888, Otto Madelung reported 33 cases.(2,6) The classical description of the disease was made by Launois and Bensaude, who published in 1898 a detailed account of 65 cases. The disease affects mostly adult males aged between 30 and 60 years old.(6) The chronic alcohol consumption was met in 60-90% of the reported cases, so alcoholism was found to be an important risk factor.(7)

The treatment is primary surgical, though the relapse is frequently noticed due to the difficulty of a complete excision of the tumour (which lack a limiting capsule).(1)

We present a Madelung disease case selected from the database of the Department of Oral and Maxillofacial Surgery of the Emergency Military Hospital Sibiu, comprising the parotid tumour cases operated in the period May 2012- November 2015.

The patients from this database were monitored regarding the evolution of the post-surgical paresis of the facial nerve, according to the type of surgical injury (elongation/ crushing or sectioning with neurorrhaphy) and regarding the post-surgical medication.

The degree of the post-surgical paresis of the facial nerve was evaluated using the House-Brackmann scale (8) reviewed by the Facial Nerve Disorders Committee in 2009 (9), adapted by us for each main branch of the facial nerve as presented in the previously published article in Acta Medica Transilvanica, vol. II, no. 4, 2014, p. 211-213. The evaluation scale of the function of the facial nerve was also applied in this case in which the paresis of two main branches of the facial nerve was present.

CASE REPORT

The male patient, B.V., aged 51 years old living the Sibiu County, was admitted in the Department of Surgery of the Emergency Military Hospital Sibiu, in 2010 for multiple, subcutaneous tumour masses with lipomatous feature in the cervical and facial areas, and was clinically diagnosed with Madelung disease. In that clinical stage, the maximum size of the tumours was encountered in the anterior cervical area. For this reason, the first surgical approach, performed under general anesthesia, consisted in the excision of the anterior cervical lipomatous masses, which presented bilateral cervical extensions.

Figure no. 1. Pre-operative aspect (July 2010), frontal view: the maximum extension of the lipomatous tumours is in the anterior cervical area, but they are also extended bilaterally on both sides of the neck, in front of the sternocleidomastoid muscles (casuistry Dr. Radu Ioan Neacșu, Dr. Adrian Popențiu)

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The immediate post-operative evolution was favourable, but the disease evolved progressively in the following 2 years and the tumour masses located in the submandibular areas became prominent and unaesthetic. The patient was reoperated under general anaesthesia by a multidisciplinary team (General Surgery, Oral and Maxillofacial Surgery) and this time, the operation consisted in the excision of the bilateral submento-submandibular lipomatous tumours.

The patient presented transitory paresis of the marginal mandibular branches of the facial nerve which remitted approximately 6 months later, without any medical treatment or physiotherapy.

Figure no. 2. Excised lipomatous mass from submandibular region, histological founding lateral-cervical fibrolipomatosis (2012)

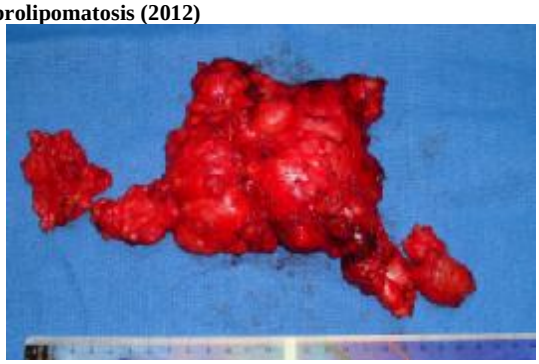

Figure no. 3. The aspect of the post-operative wound after 1week, right half-view

In 2012, in the Department of Oral and Maxillofacial Surgery, the study of the post-surgical paresis of the facial nerve began, and the patient was included in the database due to further progression of the disease. After the second intervention, the lipomatosis continued its evolution and affected, this time the parotid, occipital and bilateral posterior cervical areas causing difficulty in the head movement and aesthetic problems.

Another surgical intervention was performed under general anaesthesia by the same multidisciplinary team (General surgery, Oral and Maxillofacial Surgery) and the excision of the parotid, occipital and posterior cervical lipomas was performed. The intervention was particularly difficult in the parotid regions where the identification of the facial nerve branches was necessary, which passed through the lipomatous masses at their exit from the parotid gland. On the left side, for security reasons, the trunk of the facial nerve was exposed and after that the temporal - zygomatic ramifications. On the right side, the identification of these branches was possible without exposing the nerve main-trunk.

Figure no. 4. Pre-operative aspect, left side (March 2014). Cervical-facial lipomatosis with progressive evolution after 2 years in the posterior cervical, occipital and bilateral parotid areas

Figure no. 5. Pre-surgical aspect of the back (March 2014)

The immediate post-operative evolution was favourable excepting a hematoma developed beside the left mandibular angle which asked for maintaining the drain tube 1 week for resolution. We also noticed the paresis of the temporal zygomatic branch of the facial nerve markedly on the right side V^{th} degree compared with II^{nd} degree in the left side, according to the adapted House-Brackmann scale, probably due to the elongation of the nervous fibres during the dissection.

Figure no. 6. Posterior view. Aspect of the posterior cervical wounds 1 week after surgery (March 2014)

Figure no. 7. Front view; 1 week after surgery: the cervical and the marginal mandibular branches of the facial nerve are bilaterally functional (March 2014)

Figures no. 8, 9. Post-operative aspect after 1 week, frontal view: Vth degree paresis of the right temporal-zygomatic branches of the facial nerve (orbicular muscle of the eye) according to the adapted House-Brackmann scale. The two photos, which were taken at few seconds interval show slow closing of the upper right eyelid (March 2014)

The patient was dosed after surgery with nimodipine tablets 60mg x 6/day for 7 days, then the evolution of the facial nerve's paresis was observed according to the current protocol. One month after surgery, no improvement of the paresis was noticed, which remained Vth degree for the right temporal-zygomatic branch and IInd degree for the same branch on the left side.

At the 6 month re-evaluation, we noticed the complete remission of the bilateral paresis (Ist degree, adapted House-Brackmann scale accordingly). The patient returned for check-up, 1 year and 8 months after the last intervention, when we found the normal functioning of the facial nerve and no progression of the cervical-facial lipomatosis.

CONCLUSIONS

This case belonged to the group of patients who were administrated nimodipine in order to hasten the nerve recovery due to its perineural vasodilatation effect. In this case, the evolution of the paresis was favourable towards complete remission in the first 6 months, which was probably due to the minimal damage caused to the facial nerve branches during surgery (elongation). Comparatively, in other patient from our study, whose operation for a giant parotid tumour involved the neurorrhaphy of the sectioned marginal mandibular branch of the facial nerve, the morphofunctional recovery of the nerve lasted for approximately 1 year. On the other hand, this case gained interest because of the continuous progression of the cervical-facial lipomatosis in a 6-year follow-up. This type of tumour progression required 3 consecutive operations and no relapse was noticed in the previous operated areas.*(casuistry Dr. Radu Ioan Neacşu, Dr. Adrian Popenţiu - Emergency Military Hospital Sibiu)

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