

EVOLUTION OF THE FACIAL NERVE POST-OPERATIVE PARESIS AFTER VITAMIN THERAPY AND ACUPUNCTURE- CASE PRESENTATION

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Abstract: Tumour surgery of the parotid gland is often associated with post-operative palsy of one or more branches of the facial nerve. The paper refers to a clinical case of multiple relapsed parotid pleomorphic adenoma. In this patient, with facial nerve post-surgery paresis, favourable evolution of the facial paresis was encountered with regard to adjuvant treatment consisting in vitamin therapy and acupuncture.

Cuvinte cheie: parotidă, adenom pleomorf, acupunctură, pareză facială

Rezumat: Chirurgia de exereză a glandei parotide este frecvent asociată cu pareza postoperatorie a unei sau mai multor ramuri ale nervului facial. Este prezentat un caz clinic de adenom pleomorf parotidian multiplu recidivat la care s-a urmărit evoluția favorabilă a parezei postoperatorii a nervului facial sub tratamentul adjuvant reprezentat de asocierea de vitaminoterapie și acupunctură.

INTRODUCTION

The pleomorphic adenoma is the most frequent tumour of the parotid gland (1), with highest incidence in 30-to-60-year old women.(2) The therapeutic practice in case of benign parotid tumours is based on surgery exclusively, in such situations the following being recommended: lateral parotidectomy for tumours located in the superficial lobe or complete parotidectomy with preservation of the facial nerve for tumours located in the deep lobe or for those located in the superficial lobe and extended to the deep lobe.

The risk of post-surgery relapse of the pleomorphic adenoma is related with the intraoperative injury of the tumour capsule and with the tumour excision with insufficient surrounding glandular tissue. This addresses the fact that the capsule only seemingly bounds the tumour, presenting tumour cells both in its depth and in the adjacent structures, as extensions.(3) The risk to become malign seems to be higher in patients over 40 and in those with solitary nodules larger than 2 cm.(4)

After parotid surgery procedures such as lateral/complete parotidectomy with preservation of the facial nerve, various degrees of paresis of one or more branches of the facial nerve may be registered.

The incidence of this paresis is higher after complete parotidectomy compared to the superficial parotidectomy, and, among the branches of the facial nerve, the marginal mandible nerve presents the highest risk to be injured during parotidectomy.(5)

In order to evaluate the injury degree of the facial nerve House-Brackmann classification is generally used (revised by F.N.D.C. (*Facial Nerve Disorders Committee*) in 2009) as it estimates the global function of the facial nerve.(6) House-Brackmann classification uses a 1 to 6 scale, respectively: 1st grade (normal) - normal function:100%, symmetric in all areas; 2nd grade (slight) – slight weakness noticeable only in close inspection; complete eye closure with minimal effort, slight asymmetry of the smile with a maximal effort, absent contracture or spasm, estimated function: 80%; 3rd grade:

(moderate) – obvious weakness, but not disfiguring; may not be able to lift the eyebrow; complete eye closure and strong but asymmetrical mouth movement with maximal effort, obvious spasm, estimated function: 60%; 4th grade (moderate-severe) – obvious disfiguring weakness; inability to lift brow; incomplete eye closure and asymmetry of mouth with maximal effort, severe spasm, estimated function: 40%; 5th grade (sever) – motion barely perceptible, incomplete eye closure, slight movement corner mouth, contracture and spasm usually absent , estimated function: 20%; 6th grade (total) – no movement, loss of tone, no contracture or spasm, estimated function: 0%.(7)

For the clinical evaluation, patients were asked to raise their eyebrows (temporal branch), close their eyes tightly (zygomatic branch), to wrinkle their nose and lips (buccal branch), open their mouth and show their teeth (marginal mandibular branch).(7)

Since during a parotid gland surgery a single nerve branch, instead of all, is most frequently affected, this depending on the situation of the tumour , in this case here we adapted this scale to investigate the evolution of the paresis of the facial nerve main branches, in a separate approach.

The clinical case presented below was selected from a database of the Oral and Maxillofacial Surgery Department of the Sibiu Military Emergency Hospital. This database includes cases of parotid tumours operated on in the period May 2012-March 2014 owing to particularities of diagnosis and treatment.

CASE REPORT

A 44-year-old female patient was hospitalized in May 2012 in the O.M.F. Surgery Department S.M.U. Sibiu for a left recurrent parotid tumour relapse. The patient was known to have been diagnosed with left parotid pleomorphic adenoma operated on 8 years before, within the Oral and Maxillofacial Surgery Department of the Central Military Emergency University Hospital “Dr. Carol Davila” in Bucharest. According to the patient’s sayings, the condition started 8 years before as multiple parotid nodules on the left side for which, in the O.M.F. Department-S.U.U.M.C. Bucharest left lateral parotidectomy

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CLINICAL ASPECTS

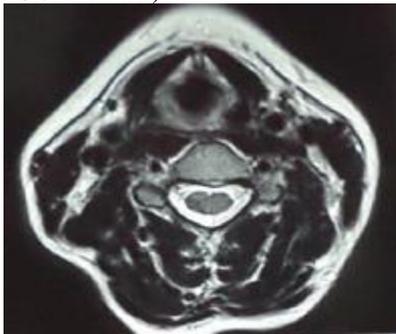
was performed with preservation of the facial nerve. The patient did not reveal any paresis of the facial nerve branches after this first procedure.

In February 2012, the disease relapsed as several parotid nodules and the patient was admitted in the O.M.F. Surgery Department S.M.U. Sibiu.

On this date, multiple nodules with diameters from 0.5 to 2 cm could be observed in the left parotid bed, adherent to deep structures, but non-adherent to superficial tissue, similar in appearance to the initial clinical form of the tumour that had appeared 8 years before (according to the patient's sayings); post-surgery scar after left parotidectomy had a normal appearance.

The CT examination in February 20th, 2012 could not precisely distinguish the nodular tumour masses at the left parotid bed level, stating: "asymmetry of the parapharyngeal spaces with possible small mass in the left space, hardly estimable through the intense artifacts generated by dental works of the patient. No relict mass or relapses at left parotid level are highlighted; subjacent to the left parotid a small tissue mass is firmly shaped, 7 cm diameter, possibly small lymphatic ganglion at this level. It asks for comparative re-evaluation every 3 months and MRI, in case of better quality images (dental works artifacts MRI also)"

Figure no. 1. MRI images –May 2012 (casuistry of Prof. Viorel Ibric Cioranu PhD)



In contrast As opposed to the CT examination, NMR images of May 3rd, 2012 were eloquent showing the left parotid gland significantly reduced by volume after the ablation of the lateral side of the gland. "Laying on the remaining parotid tissue, and adjacent to the lateral- posterior margin of the left masseter muscle, multiple round-to-oval images can be seen, with diameters from 3 to 10 mm grouped on a 2/5 cm area with grape appearance."

A new surgery was performed in May 2012 consisting in excision of the parotid tumour formations by subtotal parotidectomy and preservation of the facial nerve. Dissection was hindered by the presence of the fiber-scarf tissue in the parotid region. After surgery the patient revealed paresis of the zygomatic branches and the marginal mandible branch of the facial nerve. The paresis was assessed with 3rd grade for the zygomatic branch and 4th grade for the mandible marginal branch according to House-Brackmann scale. The histopathological examination result was the same with the HP result 8 years before, namely saliva gland pleomorphic adenoma.

After surgery, during hospitalization, the patient was given Milgamma inj. im. 1ph/day - 6 days without observing immediate improvement of the facial paresis. In June-July 2012 the patient underwent 15 sessions of acupuncture 3/week. Thereafter she was re-evaluated, the obvious resolving of the facial paresis was observed, the paresis grades of the zygomatic and the marginal mandibular branches were both reassessed 2.

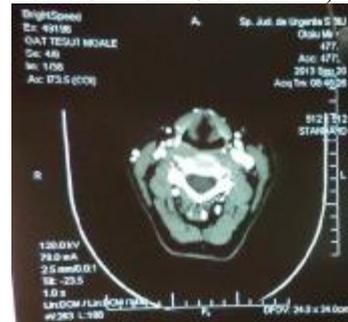
Figure no. 2. Post-surgery clinical outcome end of acupuncture treatment (casuistry of Prof. Viorel Ibric Cioranu PhD)



After a favourable post-operative course, the patient called back again in September 2013, after 1 year and 4 months from the last procedure, accusing another nodular formation in the area of the left post-parotidectomy scar.

The clinical examination revealed a 0.7 cm- diameter nodule in the immediate proximity of the left subauricular scarf, in the area of the mastoid apex. This time the nodule showed to be superficial, easily mobilized against the deep plans as well as the tegument. A new tumour recurrence is suspected, for which reason the patient was advised to have a CT examination.

Figure no. 3. Post-surgery CT images – September 2013 (casuistry of Prof. Viorel Ibric Cioranu PhD)



The CT examination in September 20th, 2013 did not show the presence of tumour recurrences or lateral cervical adenopathies, nor could the nodular formation clinically identified in the left subauricular region be characterized imaginistically.

A new surgery procedure was proposed to the patient in order to remove and histologically diagnose the nodule but the patient deferred a new operation momentarily.

CONCLUSIONS

The case presented draws attention on a high possible risk for the pleomorphic adenoma to relapse in case of multifocal onset. The concerned problem is whether indicating large excision of the parotid gland, namely subtotal/total parotidectomy with preservation of the facial nerve in case of initial multinodular parotid tumours.

On the other hand, the presented case highlighted the favourable evolution of the facial nerve paresis after B-group vitamins therapy and acupuncture. The efficiency of this therapeutic combination has to be evaluated after the statistic analysis of a large enough number of cases.

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