PRACTICAL ISSUES INVOLVED IN SUBTOTAL EDENTATION REHABILITATION
Kamel Earar1*, Madalina Nicoleta Matei1
1“Dunarea de Jos” University Galati, Romania, Department of Dental Medicine
*Corresponding author: Kamel Earar, Professor, DMD, PhD
“Dunarea de Jos” University Galati
e-mail: erar_dr.kamel@yahoo.com

ABSTRACT
The purpose of this study is accomplished by evaluating the possibilities and limitations in the treatment of partially stretched edentulous skeletal prosthesis, using special items of maintenance, support and stabilization, depending on each patient's specific clinical picture. The study group is made of a total of 15 patients who received removable protheses or restorations that presented, at least at the level of an arcade, a form of subtotal edentation. The dentist has the difficult task to postpone as much as possible the installing of total edentation. Dentist’s natural question is not whether, but when you will need a total replacement? A factor of predictability in this respect is the status of periodontal and endodontic tooth arch position, structural integrity, the way of retention of the protheses and costs. The right strategy to approach the case is closely related to the hygiene and overall disease status. The superiority of overdenture must be notified, the one that uses special retention elements but one must not neglect the specific aspects of pre and pro prosthetic therapies in the context of ensuring favorable premises for the completion of prosthetic therapy and the correlation of course options according to the overall health and oral hygiene factors.

Key words: edentulous, overdenture, attachments, social cases, removable prosthesis

INTRODUCTION
Subtotal edentation represents the stage with the most malfunctions of the dentomaxilar device, accompanied by teeth migrations, intermaxillary malrelations in all planes with echoes at the articular level, muscle hyperfunction with painful phenomena, important functional impairments regarding phonetic and esthetic issues- all requiring a carefully conducted complete therapy and a complex analysis able to offer the patients a new functional status characterized by the perfect integration of
the prosthesis system at the maxillary level and its longevit[1,2].

Certainly, more difficult to be tackled than partially stretched edentation, the subtotal raises numerous problems for the practitioner, being a “bet” hard to win[3,4]. Even if there are options addressing to the subtotal edentulous removable prosthetic therapy, the psychosomatic integration of the components is not always a difficult goal to achieve[5,6].

In spite of the rigorously observed algorithm and implementation techniques, there are some patients receiving limited subtotal prosthetic devices[7,8]. It should not be ignored any permanent changes and natural degenerative and regressive character of the natural processes in the stomatognathic system[9,10]. However, when it is achieved, the success of prosthetic therapy is unique[11,12].

**AIM**
The purpose of this study is accomplished by evaluating the possibilities and limitations in the treatment of partially stretched edentulous skeletal prosthesis, using special items of maintenance, support and stabilization, depending on each patient's specific clinical picture.

**MATERIAL AND METHOD**
The study group is made of a total of 15 patients who received removable prostheses or restorations that presented, at least at the level of an arcade, a form of subtotal edentation.

Table I, together with the attached chart details the distribution of these patients by age, highlighting the worrying prevalence in the age group 30-40 years. It has been shown that this is associated with socio-economic and educational indicators specific to both female patients, with a very low socio-economic status, and without any social insertion, being housewives.

<table>
<thead>
<tr>
<th>NUMBER OF PATIENTS</th>
<th>30 – 40 YEARS</th>
<th>40 -60 YEARS</th>
<th>OVER 60 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>%</td>
<td>12.5%</td>
<td>37.5%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Table I - Distribution of Patients by age group
Regarding the distribution by sexes, the number of female patients was lower than the number of men, indicating a well-known fact, namely the low interest of male patients for the prosthetic therapy. This reality constitutes a relevant argument in identifying the causes that lead to the evolution of partially edentulous to subtotal and total edentulous.

<table>
<thead>
<tr>
<th>NUMBER OF PATIENTS</th>
<th>FEMALE</th>
<th>MALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>37.5%</td>
<td>62.5%</td>
<td></td>
</tr>
</tbody>
</table>

Table II - Distribution of the study group on sexes

Another parameter worth to be taking into account is the patient's origin environment, which is a marker of the socio economic profile, not only evolutionary but from the point of view of edentation too, in terms of sequencing, planning therapy and therapeutic solutions chosen for the treatment plan.

<table>
<thead>
<tr>
<th>NUMBER OF PATIENTS</th>
<th>URBAN AREA</th>
<th>RURAL AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>%</td>
<td>44%</td>
<td>56%</td>
</tr>
</tbody>
</table>

TABLE III - Distribution of Patients by area of origin

All patients, after a careful analysis of their state parameters were subjected to radiological general observations allowing to assess outstanding dental units, periodontal and edentulous ridge.

In the patients with a previous prosthesis we chased the correctness of executing aspects of the prosthetic treatment and the items that advocated against the old prosthesis. Assessing the fairness of using removable restorations was done by analyzing GMT parameters:
analysis of odonto-periodontal support, analysis of muco – bone support, assessing the effectiveness of maintenance support and stabilization of the eluded elements, the effectiveness of different methods of prosthesis, ATM functionality. Of the total of 16 examined patients, only 12 showed previous prosthesis and from the latter only nine presented correct treatments but, due to natural involution processes, no longer met the current state. It emphasized the iatrogenic character of old and incorrectly made prosthesis.

<table>
<thead>
<tr>
<th>NUMBER OF PATIENTS</th>
<th>WITH PROSTHESIS</th>
<th>WRONG PROSTHESIS</th>
<th>CORRECT PROSTHESIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>4</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>%</td>
<td>25%</td>
<td>18.75%</td>
<td>56.25%</td>
</tr>
</tbody>
</table>

TABLE IV - the previous prosthesis situation

The dentist has the difficult task to postpone as much as possible the installing of total edentation. Dentist’s natural question is not whether, but when you will need a total replacement?

A factor of predictability in this respect is the status of periodontal and endodontic tooth arch position, structural integrity, the way of retention of the protheses and costs. The right strategy to approach the case is closely related to the hygiene and overall disease status.

In this regard, relating to our study group, a total of 4 patients have benefited from keeping the coronal portion, showing an acceptable and a healthy periodontal implant with axial demands as a considerable disadvantage. At a total of 11 patients, due to the mobility, it was practiced coronoplastia to increase ratio root / crown and hence the shortening the strength arm. There was also the situation where implantation and mobility due to increased number of periodontal dental units was reduced. This was found especially in patients with partial denture wearers, because of the harmful effect of the old prosthesis on the remaining teeth because of the poor hygiene. It should be mentioned that precisely because of that, most patients become subtotal edentulous. It should be noted that there were cases in which sacrifices of this kind due to improper therapies and periapicale
impairments. Regarding the distribution of teeth on the arch is desirable to have, if overdenture, a break of at least one tooth between poles to facilitate hygiene. Generally the canines provide optimal support, ideal for overdenture being among the last teeth that are lost to arch, with a long and bulky taproot. According to the classification of Körber there were not identified situations, with tripodal support, only situations with bipodal or unipodal support. It should be mentioned that the unipodal support does not rule out several teeth, but considers as a support unit a group of consecutive poles.

<table>
<thead>
<tr>
<th>NUMBER OF PATIENTS</th>
<th>UNSATISFACATORY HYGIENE</th>
<th>SATISFACATORY HYGIENE</th>
<th>GOOD HYGIENE</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>13</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>%</td>
<td>81.25%</td>
<td>12.5%</td>
<td>6.25%</td>
</tr>
</tbody>
</table>

**TABLE VI - STATE OF ORAL HYGIENE**

All patients were evaluated for elements that relate to their general health. It was noted the presence of general diseases in the context of this subtotal edentation.

<table>
<thead>
<tr>
<th>NUMBER OF PATIENTS</th>
<th>CARDIO- VASCULAR DESEASES</th>
<th>DIABETES</th>
<th>DIGESTIVE DESEASES</th>
<th>OTHER DESEASES</th>
<th>WITHOUT GENERAL DESEASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>%</td>
<td>31.25%</td>
<td>6.25%</td>
<td>12.5%</td>
<td>18.75%</td>
<td>31.25%</td>
</tr>
</tbody>
</table>

**TABLE VII - THE PREVALENCE OF THE GENERAL CONDITIONS**

<table>
<thead>
<tr>
<th>PROSTHESIS TYPES</th>
<th>NUMBER OF PROTHESIS</th>
<th>ATTACHMENTS</th>
<th>BARE SYSTEM</th>
<th>MAGNETS SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROTEZE PARTIALE ACRILICE CU CROSETE</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVERDENTURE SOCIAL</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVERDENTURE CU ELEMENTE SPECIALE</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>OVERDENTURE PE IMPLANTURI</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table VIII - Distribution by therapeutic solutions chosen
Out of the subtotal edentation breakaway context, patient N.I., aged 79, is the classic image of this clinical entity. This patient presented to the Department of Dental Prosthetics Galati with obvious disorders of mastication, phonetics and swallowing, being diagnosed with partially stretched edentulous in jaw, Class I Kennedy with an amendment, subclass D Lejoyeux, with plurifactorial etiology with disturbing functions SSG, with slow progress with local complications, general loco-regional favorable prognosis with treatment, undergoing treatment.

Total edentulous jaw Class IV Koller Russov etiology plurifactorial with SSG function disorders, with slow development, with complications local, loco-regional and general good prognosis with treatment, undergoing treatment (Fig.1).

Fig.1 Aspects of study models

The treatment was staged as follows: health education, general education, local preprosthetic preparation, local proprotetic preparation, local proper training prosthetics, postprotetic treatment (Fig.2):

Training local preprosthetic stage consisted of: mouth sanitation, oral rinses with antiseptic and anti-inflammatory solutions, extraction of teeth 11 and 22. In the preparatory phase were carried pulpectomies for prosthetic purposes: 1.2, 1.3 and 1.4 and root restorations.

Prosthetic stage itself:
- The preparation of the organic metal substructure 1.2, 1.3 and 1.4; fingerprinting and adapting the finite ends and cementing.
- Preliminary impression with standard portimpression, maxillary and mandibulary, correctly adapted with alginate; after this fingerprinting the individual portimpression was made (Fig.3).
• Checking and clinical adjustment of individual portimpressions
• Fingerprinting functional peripheral (bucoplastica wax) and central (silicone fluid)(Fig.4).
• Recording of mandibulo-cranial relationship with centric occlusion layouts(Fig.5);
• Checking the future movable prosthetic clinic layouts
• Adapting clinical dentures (control of mechanical adaptation, biological recovery mandibulo-cranial relationship, restoring functions SSG)(6,7).

Fig.2 Application in the oral cavity special elements of maintenance, support and stabilization

Fig.3 Preliminary Impression is the standard portimpression for maxillary and mandibular, correctly adapted with alginates
Figure 4 Functional peripheral fingerprinting (bucoplastica wax) and central (silicone fluid)

Figure 5. Recording of mandibulo-cranial relationship with layouts centric occlusion
CONCLUSIONS

Although the use of special items in the subtotal edentation therapy is a privilege granted to elderly patients, one must see the need to use means of social insertion represented by partial dentures and dentures with acrylic hooks overdenture without any special retention systems.

The superiority of overdenture must be notified, the one that uses special retention elements but one must not neglect the specific aspects of pre and pro prosthetic therapies in the context of ensuring favorable premises for the completion of prosthetic therapy and the correlation of course options according to the overall health and oral hygiene factors.
REFERENCES