Clinical management of lip cancer

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Casa di Cura
Di Lorenzo
Lip cancer is the most common malignant lesion of the oral cavity, constituting 25-30% of all oral cavity cancer cases.
Risk Factors

- UV
- (HPV)
- Smoking
- Alcohol
- Immunosuppression

➢ UV exposure helps to explain why 90% of lip cancers occur on the lower lip.
Tumour location

Upper lip, lower lip, commissures.

Involvement of the skin or the vermilion only, involvement of both.

Location on the lateral $\frac{1}{3}$, central $\frac{1}{3}$, or involving both the central and lateral regions of the lip.
Rarer Types

✔ Adenocarcinoma (secondary to minor salivary gland presence)
✔ Melanoma
✔ Lymphoma
✔ Sarcoma

➢ Over 90% of these cancers consist of SCCs

➢ BCCs generally occur in the upper lip (cutaneous white lip)
Initial clinical signs of lip cancer can include crusting or asymptomatic ulceration; in advanced stages, extensive ulcerative or infiltrative lesions are usually observed.

Regional lymphnode metastases represent late occurrences of the disease (10 to 15% of cases) because of the slow overall growth rate of the tumor.
Diagnosis

The diagnostic routine is completed with US, CT scan, and MR.

Staging is performed by the TNM classification system of the AJCC.

Metastatic workup is not routinely indicated because fewer than 2% of patients have distant metastasis at the time of presentation.
## Staging of Lip Cancer

<table>
<thead>
<tr>
<th>Stage 0</th>
<th>Abnormal cells are found in the lining of the lips and oral cavity and may become cancer.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage I</strong></td>
<td>The tumor is $&lt;2$ cm and has not spread to the lymph nodes.</td>
</tr>
<tr>
<td><strong>Stage II</strong></td>
<td>The tumor is $2$-$4$ cm and has not spread to the lymph nodes.</td>
</tr>
<tr>
<td><strong>Stage III</strong></td>
<td>The tumor may be any size and has spread to one lymph node that is $\leq 3$ cm, on the same side of the neck as the tumor; or is $&gt;4$ cm.</td>
</tr>
<tr>
<td><strong>Stage IV</strong></td>
<td>The tumor invades adjacent structures and has spread to one or more lymph nodes ($&gt;3$ cm $\rightarrow$ $&gt;6$ cm). The tumor has spread beyond the lip to distant parts of the body (lungs).</td>
</tr>
</tbody>
</table>
Lip cancer remains one of the most curable malignancies in the head and neck. The 10 year cause specific survival can be as high as 98% and recurrence free survival is greater than 90%.

The neglected tumors may portend a worse prognosis and progressively involve the skin of the mentum, alveolar mucosa, mandible, floor of mouth, and tongue, as well as locoregional nodal and distant metastasis.
<table>
<thead>
<tr>
<th>Stage</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Surgery-Brachytherapy with or without external radiation therapy.</td>
</tr>
<tr>
<td>II</td>
<td>Surgery-External radiation therapy and/or internal radiation therapy.</td>
</tr>
</tbody>
</table>
| III   | Surgery and external radiation therapy with or without internal radiation therapy.  
|       | ✓ A clinical trial of chemotherapy before or after surgery.               |
|       | ✓ A clinical trial of chemotherapy and radiation therapy.                 |
|       | ✓ A clinical trial of hyperfractionated radiation therapy.               |
| IV    | Surgery and external radiation therapy with or without internal radiation therapy.  
|       | ✓ A clinical trial of chemotherapy and radiation therapy.                 |
|       | ✓ A clinical trial of chemotherapy before or after surgery.               |
|       | ✓ A clinical trial of hyperfractionated radiation therapy.               |
Surgical Treatment

Wide local excision
(3 mm for BCC - 10 mm for SCC)

Neck dissection
(Level I-III)

Functional and aesthetic reconstruction
Functional and Aesthetic Reconstruction

Oral competence

Deglutition

Speech

Communication of emotion and Appearance

Labial sounds b-m-w-p

Labial-dental sounds f-v
Goals of Reconstruction

- Adequate excision of the lesion
- Normalize appearance
- Restore function
- Minimize microstomia

Adequate excision of the lesion

Normalize appearance

Restore function

Minimize microstomia
When possible, use the axiom: «Use of lip to repair the lip defect»
1. Vermillion defects
2. Defects less than $\frac{1}{3}$ of either lip
3. Defects wider than $\frac{1}{3}$ of either lip
4. Commissure defects
5. Total lip defects
Vermillion defects

- Labial Mucosal Advancement Flap
- For use only in lesions of the red lip.
- Favored method for restoration of the vermillion.

Defects less than ⅓ of either lip

- Primary Closure
  - Wedge Excision (V-lip).
  - W-plasty.
  - Bilateral Advancement flap.

Disadvantage
Some flattening of the natural contour of the lip
Defects wider than \( \frac{1}{3} \) of either lip

- **Abbe Flap (Sabattini)**
  - Based of the arterial supply of the labial artery – either superior or inferior.
  - Ideal for lesions involving \( \frac{1}{3} - \frac{2}{3} \) of the upper or lower lip but lesions must not involve the commissure.

- **Estlander Flap**
  - Similar to Abbe Flap.
  - \( \frac{1}{3} - \frac{2}{3} \) of upper or lower lip or lateral defects.

**Disadvantage**
- Patient must be cooperative
- Limitation of oral movement
- Requires division at a later date
- Oral commissure distortion requiring revision
Bengt-Johanson staircase technique

✓ Defects less than \( \frac{2}{3} \) of lower lip.
✓ Full thickness defects.

Disadvantages

The Bengt-Johanson staircase technique enables one-step repair of defects ranging from a half to two-thirds of lower lip volume, if the defect is not too lateralized.

Karapandzic Flap

✓ Defects less than \( \frac{1}{2} \) of upper lip (reverse technique).
✓ Defects less than \( \frac{2}{3} \) of lower lip.
✓ Full thickness defects.
✓ Best suited for rectangular defects of the central lower lip.

Disadvantages

The reconstructed upper lip is somewhat tight, and is not aesthetically satisfactory (reverse technique) - Microstomia (problem for denture wearers)
Bernard-von Burrow Flap
✓ ⅔ of upper and lower lip, midline defect.
✓ Adequate adjacent cheek tissue.
✓ Mild microstomia.

Disadvantages
Little or no muscular function - Problem with oral competence

Periallar crescentic advancement flap
The technique, used primarily for upper lip repair.
Essentially a modification of the Bernard-Burow flap, the periallar crescentic advancement flap alters the location of the scar so that it lies within the periallar and nasolabial folds, allowing for less distortion due to tension.

Disadvantages
Loss of philtrum and cupid’s bow - May not be hair bearing skin in males - Color differences of cheek skin - Tightness of the upper lip exists with a smaller oral aperture
Defects wider than ⅓ of upper lip

May use Cross lip flaps
✓ Estlander flap.
✓ Abbe flap.
✓ Gillies flap.
✓ Melolabial flaps.

Commissure defects
➢ Difficult to recreate
✓ Estlander
✓ Karapandzic
✓ Others (Zisser flap)
Total defects

- Abbe, Estlander, Karapandzic ... and primary closure are most common ... but, as much as possible, use lip to repair lip.
- Distant flaps (Upper Lip Reconstruction → Bitemporal flaps,
- Lower lip reconstruction → Deltopectoral flap,
- Microvascular free flap, Radial forearm free flap.
Post operative details

✓ Sutures may be removed as early as 1 week postoperatively.

✓ Cross-lip pedicles may be separated at 3 weeks.

✓ Revision and secondary commissuroplasty procedures are best performed when most of the healing and postoperative edema is completed, usually after a minimum of 3 months.
Complications

➢ Early complications
Infection, suture abscess, sialocele, and fistula formation can be minimized with appropriate care of suture lines, appropriate preoperative oral hygiene, perioperative prophylactic antibiotics, and careful surgical technique.

➢ Late complications
Aesthetic and functional loss can arise from scar formation and wound contracture. Another potential complication is hypertrophic scar formation.
<table>
<thead>
<tr>
<th>N</th>
<th>Lesions</th>
<th>Reconstruction Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>red lip</td>
<td>Labial Mucosal Advancement Flap.</td>
</tr>
<tr>
<td>79</td>
<td>&lt;1cm</td>
<td>Wedge Excision &amp; Primary Closure (<em>V/W-plasty</em>), Bilateral Advancement flap.</td>
</tr>
<tr>
<td>151</td>
<td>1-2cm</td>
<td>Abbè-Estlander flap, Bengt-Johanson staircase technique, Zisser flap.</td>
</tr>
<tr>
<td>23</td>
<td>2-3cm</td>
<td>Abbè-Estlander flap (<em>unilateral-bilateral</em>), Bernard-von Burrow, Karapandzic, Gillies.</td>
</tr>
<tr>
<td>12</td>
<td>&gt;3cm</td>
<td>Bernard-von Burrow, Karapandzic, Gillies.</td>
</tr>
<tr>
<td>19</td>
<td>Commissure repair</td>
<td>Wierneck-Dieffembach flap</td>
</tr>
</tbody>
</table>
Conclusion

➢ The best prognostic, aesthetic and functional results are obtained in lip cancer, for the early-stage lesions and in the choice of the most appropriate surgical approach.

➢ The ideal surgical option should always be aimed at maintaining, or altering as little as possible, the functionality and appearance of the lip.

➢ The most important problems, in lip cancer surgery, have to be faced when repairing greater loss of tissues. In these cases, there are reconstructive problems, with unsatisfactory aesthetic and functional outcomes.
Thanks for your kind attention.