Journal of Oncology and Cancer Research (JOCR)

Minimizing Functional and Aesthetic Complications of Neck Dissections

José Francisco de Sales Chagas
Coordinator Sao Leopoldo Mandic Medical School, Araras, Brazil

Published: 20/04/2018

*For Correspondence

Prof. José Francisco de Sales Chagas,
Head And Neck Surgery. Sao Leopoldo Mandic Medical School, Campinas, Brazil

Email: jose.chagas@slmandic.edu.br

https://doi.org/10.28967/jocr.2018.01.18003
Peripheral The radical neck dissection is still the procedure standardized for the treatment of the cervical node metastases, despite it presents varied degrees of morbidity. Reported by Crile in 1906 \(^1\), neck dissection remains the standard treatment for squamous cell carcinoma of the head and neck. There are numerous reports on the good results of neck dissection in the treatment of metastatic lymph nodes with reduced surgical morbidity and mortality at extremely acceptable levels due to advances in anesthesiology and postoperative care. Despite these advantages, there is still reluctance to accept this surgery, considered as mutilating or deforming, especially in young female patients.

Numerous incisions have been used to perform neck dissection, with most of them using a combination of a transverse and a longitudinal component. The longitudinal component of these incisions is perpendicular to the Langer’s lines (lines of skin tension) and, due to this fact, presents a high risk of scar retraction and keloid formation. Scar retractions can provide limitation of the movements of the neck, with consequent local pain, that vary from medium to high intensity, contributing to worsening the patient’s quality of life \(^2\). Most single incisions, used for neck dissection, have a "J" or "U" shape, which is contrary to the direction of the lines of skin tension, allowing the same functional and aesthetic difficulties.

According to Appiani \(^3\), before Crile’s article (1906), Kocher (1880) and Kuettner (1898) described single incisions for access to cervical adenopathies. Since then, several incisions have been described, suggesting that none of them are versatile enough to meet the criteria required when designing a cervical flap. These criteria include: 1) adequate exposure of the anatomical elements of the neck; 2) adequate blood supply to cutaneous flaps; 3) acceptable relation of the incision with the cervical vessels; 4) easy conversion or conjunction with other incisions to approach the primary tumor; 5) convenience for making stomas; 6) compatibility with reconstructive techniques; and 7) acceptable functional and cosmetic aspects. Additionally, the technique must be easy to learn and reproducible.

Mac Fee \(^4\), in 1953, used two parallel transverse incisions to perform radical neck dissection that presented a risk of cutaneous necrosis by reducing the vascularization of the skin flaps due to the extension of the pedicle \(^5\). Attie \(^6\), in 1957, used a single transverse incision, but its use did not have repercussion due to the belief that single incisions would provide a higher rate of recurrence by increasing surgical difficulty. The transverse incisions have the same direction of the skin tension lines and do not interfere with the cutaneous blood supply, which provides excellent aesthetic appearance and absence of scar retraction \(^7,8\). The rationale for its use is that the blood supply to the cutaneous areas of the neck is vertical, and therefore there is very little damage to superficial arteries and veins \(^2\) (Figure 1).

**Figure 1.** Extende single transverse incision beyond the midline and trapezius muscle boundary
The experience with the use of two transverse and parallel incisions (Mac Fee’s incision) in papillary thyroid carcinomas with lymph node metastases led us to choose an extended single transverse incision (Attie’s incision). The incision initiated at the anterior border of the trapezius muscle and extending beyond the cervical midline allowed easy exposure of all anatomical elements of the neck (Figure 2). Initially, the greatest difficulty was found with lymph node level V, which was solved with the extension of the incision to about 3 to 4 cm beyond the limits of the trapezius muscle. In some patients it may be more difficult to reach lymph nodes of level II (junctional lymph nodes), but an upper curvature of the posterior portion of the incision solves this problem. Extension of the incision approximately 3 cm beyond the midline facilitates the dissection of level IA (submental) and level IV lymph nodes.

![Figure 2. Surgical field demonstrating good exposure of all lymph node levels.](image)

The association of the extended single transverse incision with other surgical approaches did not present difficulties. In patients with primary tumors of the posterior portions of the oral cavity or oropharynx and submitted to unilateral neck dissection, the maneuver used for surgical exposure was to prolong the cervical incision to the opposite cervical region or to associate with a pre auricular incision. The extension of the incision to the contralateral cervical region presents greater surgical handling and, consequently, could lead to a longer surgical time. However, we verified that there was no increase in the surgical time when compared to the surgeries performed with the association of incisions. In addition to a similar surgical time, the aesthetic gain is quite large, as it avoids a vertical incision in an apparent region, such as the submental region.

Unchanged surgical time, good surgical exposure, little technical difficulty presented, the possibility of adequate approach to primary lesions with or without association with other incisions, and especially the best aesthetic and functional results made this approach standardized in our service, as routine for radical or selective neck dissections. Regarding the aesthetic and functional aspects, we can verify the benefit of the extended single transverse incision in the postoperative follow-up because there were no apparent scars and no painful complaints or scar retractions (Figure 3). Shoulder dysfunction does not depend on the cutaneous incision, therefore, this aspect was not considered.
Figure 3. Late postoperative with excellent aesthetic appearance

REFERENCES


