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THE ROLE OF NECK DISSECTION IN A TREATMENT OF SOLITARY NECK METASTASIS OF REMOTE PRIMARY TUMOR

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Summary

In the last 30 years, the introduction of new targeted cancer drugs has changed the approach to cancer patients, as well as the prognosis and expected survival. Some clinical studies show improved survival when radical local radiotherapy is added to standard systemic therapy in oligometastatic disease. This work aimed to show the positive impact of neck dissection on survival in selected cases of patients with supraclavicular neck metastasis of remote (infraclavicular) primary sites. In a 10-year period, 15 patients treated with neck dissection (for supraclavicular metastasis from infraclavicular primary origin) in the Head and Neck Surgery Department database were found. There were 13 patients with breast cancer, one patient with lung cancer, and one patient with ovarian cancer. In 2/13 patients with breast cancer, a long follow-up period without signs of disease was achieved. The patient with lung cancer had uneventful long-term follow-up. The patient with ovarian cancer gained three years without signs of the disease before dissemination occurred. This case series suggests neck dissection as a reasonable treatment of choice in selected patients with neck metastasis from remote primary sites. Despite overall rare complete control of the disease, described in the literature and our study, long-term disease-free follow-up can be achieved in some patients.

KEYWORDS: *neck metastasis, remote primary tumor, neck dissection*

INTRODUCTION

In the last 20 to 30 years, we have witnessed huge advancements in oncology treatment. The introduction of new targeted cancer drugs has changed the approach, as well as the prognosis and expected survival of many cancer patients. In the 2000s there were fewer diagnostic possibilities to detect disseminated disease and fewer possibilities for treatment. In radiotherapy and chemotherapy-resistant cancers, in some cases, surgery was the only treatment option. Neck dissection (ND) for selected patients with supraclavicular metastasis of remote (infraclavicular) origin was considered a valuable option. Twenty years later, PET-CT has become the gold standard for diagnosis. In addition, a variety of targeted cancer drugs are now available, along with an emerging concept of distinct treatments for patients with oligometastatic versus disseminated disease. Furthermore, additional local treatments, primarily targeted radiotherapy, are applied alongside systemic therapy fort patients with oligometastat-

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ic disease. Based on the positive impact of targeted radiotherapy on a patient's prognosis or quality of life in oligometastatic disease, a surgical option (neck dissection) could be included in the treatment plan in carefully selected patients.

Fine needle aspiration biopsy (FNAB) is one of the first steps in the diagnostic protocol for neck metastasis. When FNAB is inconclusive, a core biopsy is indicated, which can differentiate between various malignant diseases in a neck lymph node. Most types of lymphoma can be identified through core biopsy, making open biopsy rarely necessary. Metastatic carcinoma can be differentiated between head and neck origin and remote (infraclavicular) origin. Head and neck primary sites include head and neck mucosal or skin squamous cell cancer (SCC), nasopharyngeal, thyroid, and salivary gland cancer, melanoma, and sarcoma. Infraclavicular cancers usually metastasize to supraclavicular lymph nodes(1,2). They can present with known or unknown primaries. SCC neck metastasis without known primary presents a diagnostic challenge because no morphological diagnostic methods (cytology or histology) can distinguish between head and neck and lung origin. Most patients with neck metastasis have incurable malignant disease, but some can achieve better survival if the best treatment options are selected(1).

Approximately 1% of all head and neck malignancies are neck metastases of remote primary sites(1). The most common are breast, lung, oesophagus, gastrointestinal and genitourinary cancer, and rarely CNS malignancy(1).

When a metastatic neck lymph node is diagnosed, the first question to be answered is whether the patient was previously diagnosed with the malignant disease or the neck metastasis is the first presentation of malignancy. The second question is whether this is the only disease manifestation or one of the oligometastatic or disseminated disease presentations.

ND is the surgical treatment of choice for many head and neck cancer patients. The perception of ND as a mutilating operation among many patients and professionals leads to a reduced number of patients presented to head and neck surgeons with the intention of treating neck metastases of remote primary sites. As oncologic treatments evolved, head and neck surgery evolved likewise. Most NDs performed today are achieving regional disease control and preserving all functional structures and, consequently, quality of life.

The aim of this case series is to show the positive impact of neck dissection on survival in selected cases of patients with supraclavicular neck metastasis of remote (infraclavicular) primary site.

PATIENTS AND METHODS

A search for patients treated with ND for infraclavicular primary in the Head and Neck Surgery Department database was performed. In a 10-year period (between 2002 and 2012) 22 patients were found. For only 15 patients there was sufficient follow-up data available in electronic medical record. There were 13 patients with breast cancer, one patient with lung cancer, and one patient with ovarian cancer (Figure 1).

RESULTS

In all patients, supraclavicular metastasis was the only sign of disease and ND was performed. The follow-up period before and after ND is shown in Figure 2.

We analyzed 13 patients with neck metastasis resulting from breast cancer. The average duration from the initial breast cancer diagnosis to the occurrence of neck metastasis was 50 months, ranging from 0 to 324 months. During the follow-up period, dissemination was observed in 11 patients, with the time to dissemination varying from 2 to 93 months. Notably, two patients remained disease-free throughout follow-ups of 39 months and 129 months, respectively.

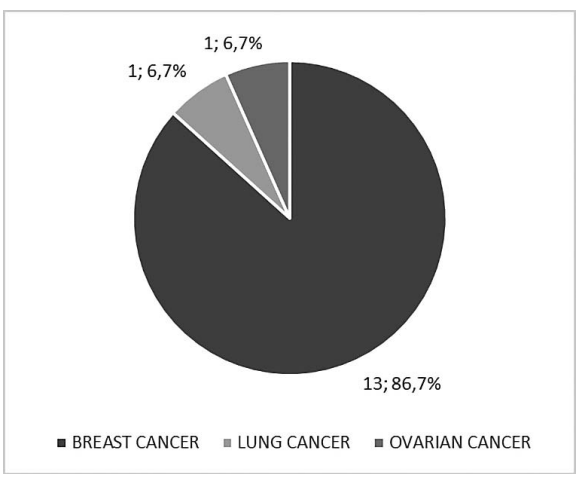

Figure 1. Primary sites in patients with neck metastasis.

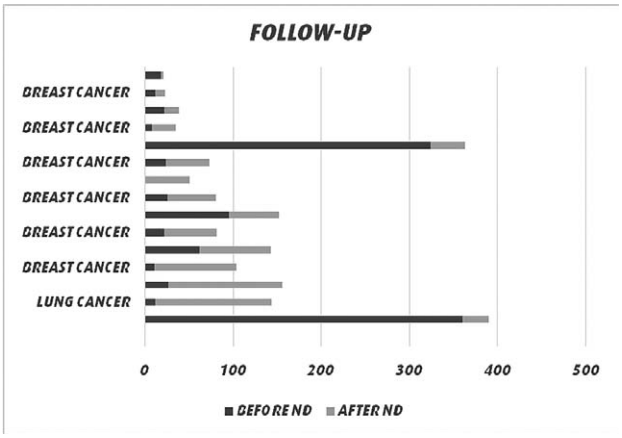

Figure 2. Follow-up (in months) before and after the neck dissection (ND).

In 2002, a patient with lung adenocarcinoma presented with supraclavicular neck metastasis. A biopsy was performed, and the patient was treated with chemotherapy (cisplatin and 5-FU). By 2003, neck metastasis remained the only sign of the disease. A ND was performed, followed by chemotherapy with gemcitabine and cisplatin. In the dissection specimen, 19 out of 29 dissected lymph nodes tested positive. By 2014, the patient showed no signs of disease.

A patient with metastatic ovarian cancer was treated with ND in 2008. The metastasis measured 7 cm x 4.5 cm x 2.5 cm and was the only positive lymph node found out of 36 examined in the specimen. Thirty years prior, the patient underwent surgery for ovarian cancer, followed by cyclophosphamide therapy. Three years after ND, the dissemination of the disease was diagnosed and treated with systemic therapy.

DISCUSSION

For this group of patients, there is no consensus regarding optimal treatment. There are no evidence-based recommendations. In all patients, it is a sign of advanced disease stage(3). Our results are similar to the data from the literature. We achieved long disease-free follow-up periods in 4 out of 15 patients.

The most common origins of neck metastases from remote primary sites are breast cancer in females and lung cancer in males(1,3,4).

In patients with breast cancer, neck metastases develop in up to 4.3%(5,6). Until 2002 according to AJCC TNM neck metastasis was considered a disseminated disease(7). Since the 6th edition of classification, it is considered pN3c if a metastatic lymph node is localized in the ipsilateral supraclavicular region (8-10). If there are no signs of dissemination it can be classified as stage III (T1-4 N3M0) or regionally advanced disease(10). It is considered an unfavorable prognostic sign(6).

Neck metastasis develops in up to one-third of all lung cancer patients(1). The majority are non-small cell lung cancer. Supraclavicular metastasis is classified as N3 and belongs to stage IIIB (7-10). SCC lung cancer presents a problem due to the impossibility of distinguishing primary lung SCC from head and neck SCC metastasis. Up to 19 % of head and neck patients develop primary lung cancer(11).

In ovarian cancer, up to 30% of patients present with neck metastasis(1). Neck metastasis can occur at diagnosis or even up to 240 months after the initial presentation. Patients with neck and retroperitoneal metastases have a better 5-year survival rate (58-84%) compared to those with peritoneal carcinomatosis (18-36%)(1).

ND can find a place in the treatment of neck metastases of oesophageal, kidney, and testicular cancer(1,3). However, ND should not be performed in patients with gastric, hepatocellular, bladder, endometrial, cervical, and prostate cancer, as well as CNS malignancies(1,3).

Metastatic supraclavicular lymph nodes should raise suspicion of remote primary tumor sites. In cases of SCC neck metastases, the primary tumor of the head and neck should be excluded, and detection of the remote primary should focus on the lungs, esophagus, and cervix.

The greatest limitation of our series is the small number of patients included over a long period of time. Previous larger series published(1-6) also failed to include enough patients sufficient for evidence-based recommendations.

Treatment goals should be survival extension with improved quality of life. In many patients, less than radical ND, with preservation of functional structures, can be performed, making ND an appropriate surgical procedure to achieve the mentioned goals.

Some clinical studies show improved survival when radical local radiotherapy is added to

standard systemic therapy in oligometastatic disease, there is no reason to avoid surgery (neck dissection) in similar selected cases(12).

Multidisciplinary decision-making cannot be emphasized enough. Decisions should always be made at board meetings, including all specialists involved and individually for each patient.

CONCLUSION

This case series suggests neck dissection to be a reasonable treatment of choice in selected patients with neck metastasis from remote primary sites. Despite overall rare complete control of the disease described, both, in literature and in our study, in some patients, long-term disease-free follow-up can be achieved.

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Sažetak

ULOGA DISEKCIJE VRATA U LIJEČENJU SOLITARNIH METASTAZA NA VRATU PORIJEKLA UDALJENIH PRIMARNIH TUMORA

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Pristup onkološkim pacijentima, prognozu i očekivano preživljenje u posljednjih 30 godina promijenilo je uvođenje novih „ciljanih" lijekova. Neke kliničke studije pokazuju bolje preživljenje kada se sistemskom liječenju pridruži lokalna radioterapija kod bolesnika s oligometastaskom bolesti. Prikazom ove serije bolesnika cilj je pokazati pozitivan učinak disekcije vrata na preživljenje u odabranih bolesnika sa supraklavikularnom metastazom udaljenog (infraklavikularnog) sijela. U 10-godišnjem razdoblju u bazi podataka Odjela za kirurgiju glave i vrata pronađeno je 15 pacijenata liječenih disekcijom vrata zbog metastaze na vratu udaljenog (infraklavikularnog) primarnog sijela. Trinaest bolesnica s karcinomom dojke, jedan bolesnik s karcinomom pluća i jedna bolesnica s karcinomom jajnika. U 2/13 bolesnica s karcinomom dojke postignuto je dugo razdoblje praćenja bez znakova bolesti. Bolesnik s karcinomom pluća bio je bez znakova bolesti tijekom dugogodišnjeg praćenja. Bolesnica s karcinomom jajnika bila je bez znakova bolesti tijekom 3 godine nakon disekcije vrata, a prije diseminacije. Disekcija vrata indicirana je u odabranih pacijenata s metastazom na vratu udaljenog primarnog sijela, osobito kod karcinoma dojke, pluća i jednjaka sa stadijem III bolesti, kada operacija može doprinijeti liječenju.

KLJUČNE RIJEČI: *metastaza na vratu, udaljeno primarno sijelo, disekcija vrata*