

# Spontaneous Fracture Of The Clavicle From Laryngeal Carcinoma Distant Metastasis

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## Abstract

Distant metastases of laryngeal carcinoma are rare and their diagnosis and management are still a challenge for the Otolaryngologist. We present a case of an 56-year-old man with a history of total laryngectomy and selective neck dissection (Level II, III) in the right side two years ago, who presented to our Hospital with a swelling, redness and pain on his left clavicle, without a history of trauma in the above area. Radiological examinations revealed a spontaneous fracture of the left clavicle. Patient underwent surgical procedure of the above area and biopsies were taken from the surgical field and the skin. Metastatic infiltration of the overlying skin cancelled the decision for postoperative radiotherapy or chemotherapy because the closure of the wound would be at risk. Patient discharged having only palliative treatment.

We present the prognostic factors, location and management of distant metastases. Surgeons have to keep in mind an index of high risk for distant metastasis based on the previous surgical procedure, the histology and staging of the carcinoma. This could be useful for early diagnosis of metastatic disease in order to improve the quality of life of these patients.

## INTRODUCTION

Larynx cancer presents relatively low frequency in comparison to the total number of carcinomas in all organs. This frequency is comparable to the frequency of mouth and thyroid cancer. 95-98% of the malignant larynx neoplasms are made of polytypical squamous epithelium, of various differentiation degree that is clinically expressed in many points and symptoms, depending on their spotting and phase.

The larynx carcinomas, in proportion to their spotting, are divided into hyperglottal, glottal and hypoglottal. In every area, the existences of folds, membranes, foramens and anatomic particularities result to the different expansion of larynx cancer. This expansion may happen either on tissues, neighboring tissues and organs either lymphogenically by following specific ways and leading to the appearance of cervicalis metastasis, either bloodly by giving distant metastasis. In this assignment, we present the case of a patient with automatic clavicle fracture from distant metastasis of larynx cancer.

## CASE REPORT

A 56-year old patient was admitted in our clinic suffering from fever for the last two months without remission with

the usual conventional treatment with febrifuges and antimicrobial chemotherapy. The patient reported pain, edema and redness in the area of the left clavicle while he has history of larynx cancer, diagnosed two years ago with intraglottal spotting (phase T<sub>4</sub>N<sub>1</sub>), he underwent total laryngectomy and functional lymph gland cleaning of the right cervicalis area (Level II-III) since the operation demonstrated two inflated lymph glands in this area. Their histological test showed that the one lymph gland was inflammatory and the other metastatic.

Full laboratory and radiological examination was made for the patient and the finding was fracture of the left clavicle without prior historical injury in this area. The radiological examination included magnetic resonance (fig. 1), CT- scan with three-dimensional representation of the fractured bone (fig. 2), scintigram of bones (fig. 3) and ultrasound examination with color Doppler of the ipsilateral breast (fig. 4).

Figure 1

Figure 1: M.R.I.

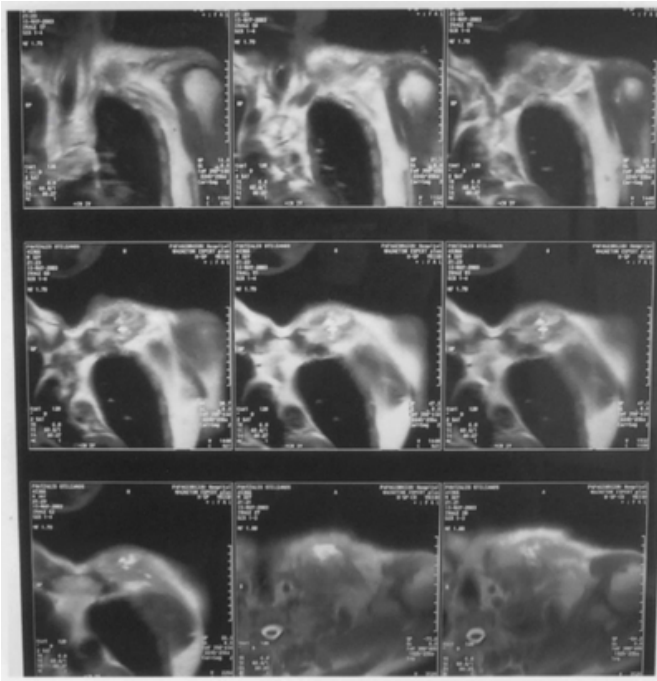


Figure 2

Figure 2: 3D- CT Scan

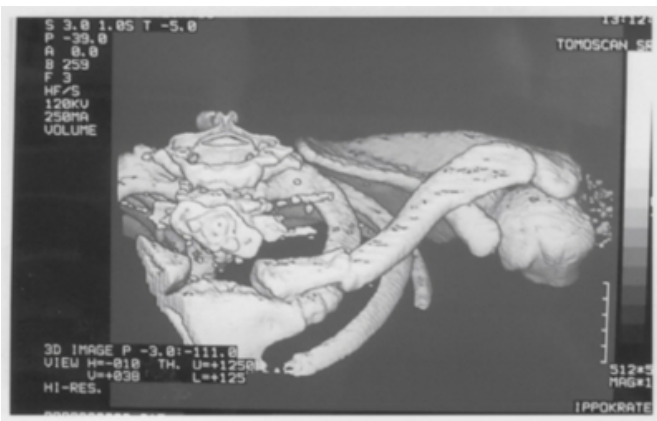


Figure 3

Figure 3: Scintigram of bones

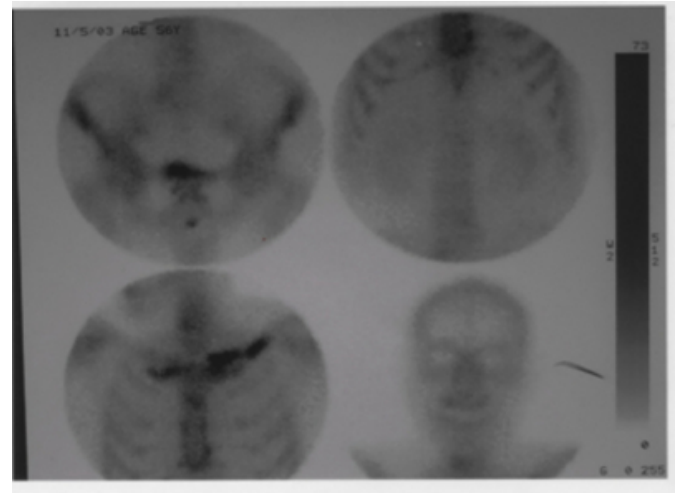


Figure 4

Figure 4: Ultrasound exam. of the ipsilateral breast



The magnetic resonance and the CT- scan demonstrated the fracture of the left clavicle with accompanying bone corruption while the bone scintigram noted increased absorption of radioisotope in the area of the left clavicle. Lastly, the examination with color Doppler for the area of the left breast was normal.

The puncture with needle (FNA) in this area and the microscopic examination of this material certified the existence of cancer cells. The patient entered the operating theater where he underwent to opening of the injury and was found out shapeless mass, of caseous composition, which has corrupted the bone

and infiltrated and purulated the incumbent skin, fact that excluded the surgical rehabilitation of the fracture.

Meticulous surgical cleaning of the area and collection of tissue particles followed for biopsy. The pathological and anatomical examination was positive for metastatic cancer from the initial neoplastic focus, since the microscopic examination of the sent tissue particles showed that they constitute parts of spinocellular carcinoma. Due to the related purulence and corruption of the incumbent skin in this area, the application of radiotherapy was not considered to be necessary and the patient was set in comforting chemotherapy.

### **DISCUSSION**

The distant metastasis of the larynx carcinoma present variety of spotting. The greatest ratio of those metastasis remains undiagnosed throughout the patient's life, it is estimated that the 75% of the patients suffering from larynx cancer remain undiagnosed<sup>1</sup>.

Only the 7-12% of the larynx cancer patients present distant metastasis during the time of the disease's expression<sup>2</sup>. Studies after the necrotomies of larynx cancer patients showed that the 35-90% of the cases had distant metastasis.

Many studies are performed in order to define the main prognostic factors that favor the presentation of distant metastasis in patients suffering from larynx cancer. It was noted that patients who underwent total laryngectomy and postoperative radiotherapy presented distant metastasis and the factors that favor the presentation of distant metastasis were studied and it was found out that the extracapsular diffusion of the disease, the feeling of cervicalis lymph glands (N<sub>1</sub>-N<sub>3</sub> classification per TNM), the histological evidence for cervicalis metastasis and the existence of three or more palpable cervicalis lymph glands, constitute bad prognostic factors<sup>3</sup>. On the contrary, the age, the sex, the phase of the tumor and the preceded radiotherapy are not to blame in statistically great degree for the presentation of those metastasis<sup>4</sup>. On the contrary, other studies found out statistically important relation between the phase of the larynx cancer and the presentation of distant metastasis with the larynx cancer of phase III and IV, according to the classification system per AJCC, with more chances to give distant metastasis. Furthermore, it is underlined that the phase classification per phase (I-IV) and not T or N separately, offers best assistance to the prediction of distant metastasis<sup>5</sup>.

It is also believed that factors like the local and regional expansion or reversion of the tumor constitute inculpatory factors while no such finding was stated for the

differentiation of the tumor. Furthermore, the presence of lymph glands in the lower cervicalis area is combined with the bigger chance for distant metastasis in patients suffering from larynx cancer in comparison to the presence of lymph glands in the upper cervicalis area<sup>6</sup>. Lastly, it was found out that the chance of presentation of distant metastasis in patients suffering from larynx cancer may likely happen from 1 to 5-6 years after the initial treatment either surgically either by radiation while there is small possibility after this period of time<sup>7</sup>.

The greater frequency of the presentation of distant metastasis is observed in hyperglottal carcinomas<sup>8</sup> in comparison to the glottal and hypoglottal carcinomas and the most frequent distant metastasis is the one in the lung that takes place through the lymphglanding diffusion of the tumor with the lymph glands of the mediastinum and the pleura. The lung injury is usually small but accompanied by expected time of survival less than four months. Other areas of distant metastasis are the bones, like the femoral bone, the ethmoid bone, the tibia, the phalanxes and the temporal bone. The liver metastasis are presented like small and multiple injuries while the heart metastasis are observed in the 10% of the total cases<sup>9</sup>. From the treatment point of view, depending on the spotting of the distant metastasis, various forms of treatment are suggested, like chemotherapy, radiotherapy, surgical removal of the injury, if it is spotted and creates other operational problems or, lastly, just comforting treatment.

### **CONCLUSION**

The presentation of distant metastasis in patients suffering from larynx cancer reduces significantly the percentage of the five-year survival and the usual treatment is comforting. In any case, the regular re-examination is required after any kind of treatment approach in patients suffering from larynx cancer for the most opportune diagnose of distant metastasis. The meticulous and accurate estimation of all the clinic points and symptoms that constitute bad prognostic factors may help to the reduction of the percentage of presentation of such metastasis.

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