Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Radiology

A Rare Case Report of a Destructive Involvement of the Thyroid and Cricoid Cartilages in a Kappa-Monotypic Plasma Cell Multiple Myeloma

Issir Mouhoumed Mohamed[1]*, Laanaya Farida[1], Orgi Anas[1], Merzem Aicha[1], Hasna Belgadir[1], Moussali Nadia[1], El Benna Naima[1]

[1]Department of Radiology, Ibn Rochd University Hospital, Casablanca, Morocco

DOI: https://doi.org/10.36347/sjmcr.2026.v14i08.030 | **Received:** 29.04.2026 | **Accepted:** 02.06.2026 | **Published:** 24.08.2026

***Corresponding author:** Issir Mouhoumed Mohamed
Department of Radiology, Ibn Rochd University Hospital, Casablanca, Morocco

Abstract **Case Report**

Extramedullary manifestations of multiple myeloma are rare, and involvement of the laryngeal cartilage remains exceptional. These lesions are important to recognize, as they can mimic a primary laryngeal tumor or a cartilaginous tumor, while reflecting aggressive tumor biology in the context of a plasma cell dyscrasia. We report the case of a 51-year-old man with no reported medical history or toxic habits, diagnosed in 2025 with kappa-monotypic plasmablastic multiple myeloma complicated by cardiac decompensation and treated with bortezomib, cyclophosphamide, and dexamethasone. During the evaluation of the lesions, imaging revealed diffuse active osteolytic lesions of the axial and peripheral skeleton, as well as a destructive left laryngeal lesion centered on the lateral lamina of the thyroid cartilage and infiltrating the ipsilateral cricoid cartilage. A cervical CT scan confirmed a destructive lesion centered on the laryngeal cartilages with heterogeneous enhancement after contrast injection. Laryngoscopy with biopsy of the lesion revealed a kappa-monoclonal plasma cell proliferation expressing CD138 and CD56, confirming laryngeal involvement by multiple myeloma. This observation highlights the rarity of involvement of the thyroid and cricoid cartilages, the need to include myeloma in the differential diagnosis of destructive lesions of the laryngeal cartilage, and the central role of histological confirmation prior to any therapeutic decision.

Keywords: Multiple myeloma, laryngeal cartilage, thyroid cartilage, cricoid cartilage, extramedullary involvement, plasmacytoma, kappa light chain, CD138, CD56, computed tomography.

INTRODUCTION

Multiple myeloma is a clonal proliferation of plasma cells; its diagnosis is based on the combination of evidence of plasma cell clonality and disease-defining features, including organ involvement or validated biomarkers of malignancy [1]. In the majority of cases, the clinical picture is dominated by bone marrow infiltration and osteolytic bone involvement. A smaller but clinically significant proportion of patients develop plasmacytomas outside the bone marrow compartment. In several series, extramedullary involvement has been associated with more aggressive tumor biology, treatment resistance, and a poor prognosis [2].

The larynx is an unusual site for plasma cell neoplasms, and involvement of the laryngeal cartilages is particularly rare. Involvement of the thyroid cartilage is reported more frequently than that of the cricoid cartilage, whereas combined involvement of both structures remains exceptional [3–9].

A destructive lesion of the laryngeal cartilage may suggest squamous cell carcinoma, chondrosarcoma, lymphoma, infection, or inflammatory chondritis; therefore, the diagnosis cannot be based on imaging alone. We report a rare case of kappa-monotypic plasmablast multiple myeloma involving both the thyroid and cricoid cartilages, confirmed by laryngoscopic biopsy.

CASE REPORT

The patient was a 51-year-old man with no reported medical history or substance abuse. He was diagnosed in 2025 with kappa-monotypic plasmablastic multiple myeloma. The patient was undergoing chemotherapy (VCD regimen: bortezomib, cyclophosphamide, and dexamethasone), and his clinical course was complicated by cardiac decompensation.

As part of the imaging workup, a positron emission tomography (PET) scan coupled with fluorodeoxyglucose (FDG) computed tomography (CT)

revealed multiple metabolically active osteolytic lesions involving the axial and peripheral skeleton. In addition to this diffuse skeletal involvement, the examination identified a destructive, hypermetabolic lesion in the left larynx.

A dedicated cervical CT scan confirmed destructive involvement of the left laryngeal cartilaginous structure. On axial soft-tissue window slices, the lesion involved the lateral lamina of the left thyroid cartilage and infiltrated the ipsilateral cricoid cartilage. After injection of an iodinated contrast agent, it showed heterogeneous enhancement (Figure 1).

Given the unusual nature of this cartilaginous lesion and the possibility of a primary laryngeal tumor or a cartilaginous tumor, a laryngoscopy with biopsy was performed. Histopathological and immunohistochemical analysis revealed a kappa-monoclonal plasma cell proliferation expressing CD138 and CD56. These findings were consistent with laryngeal involvement by known kappa-monotypic plasma blast multiple myeloma.

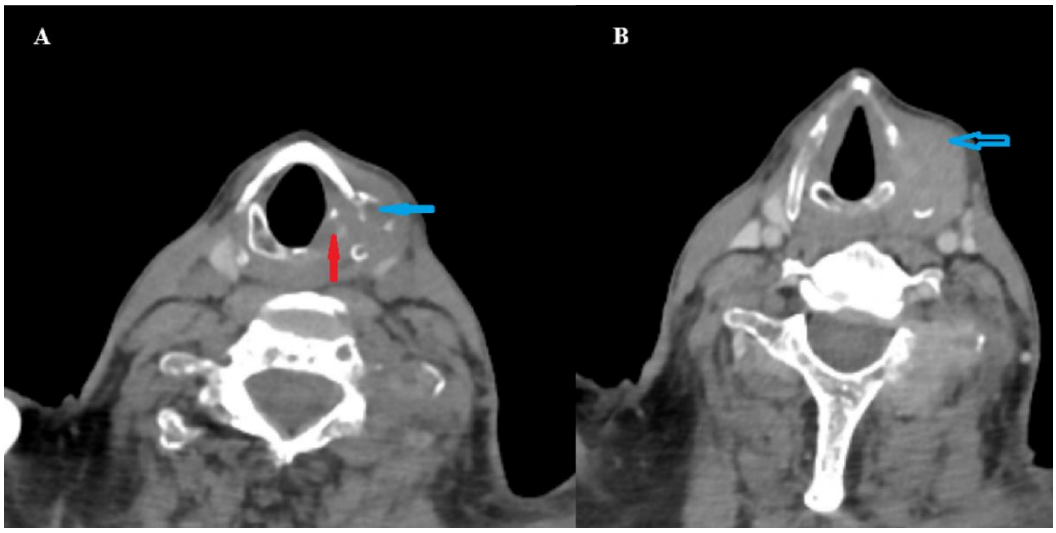

Figure 1: Axial CT scans of the neck in soft-tissue window mode showing destructive involvement of the left laryngeal cartilage due to multiple myeloma

A: Non-contrast scan showing a destructive lesion centered on the lateral lamina of the left thyroid cartilage (blue arrow), with involvement of the ipsilateral cricoid cartilage (red arrow).

B: Contrast-enhanced scan showing heterogeneous enhancement of the left laryngeal lesion (blue arrow).

DISCUSSION

The main interest of this observation lies in the anatomical rarity of the location. Laryngeal cartilage myeloma is a rare condition that remains insufficiently characterized in the literature [4]. Published cases mainly involve the thyroid cartilage, whereas involvement of the cricoid cartilage is described even more rarely [5-9]. Our case is therefore notable for the simultaneous involvement of the thyroid cartilage lamina and the ipsilateral cricoid cartilage in the context of kappa-monotypic plasma cell multiple myeloma.

Several mechanisms may explain the occurrence of a plasma cell neoplasm within the laryngeal cartilages. Some authors have suggested that the progressive ossification of the laryngeal cartilages could create spaces containing bone marrow, allowing for myeloma infiltration [5,6]. Direct extension from an adjacent plasma cell mass is another hypothesis [4]. In practice, imaging may suggest a destructive lesion centered on the cartilage, but it rarely allows for a definitive distinction between these mechanisms. The key challenge is to raise the diagnostic suspicion and obtain histological confirmation.

The radiological differential diagnosis is broad. Squamous cell carcinoma remains the most common malignant laryngeal tumor, with the potential for cartilage invasion in advanced forms. Chondrosarcoma can arise from the laryngeal cartilaginous structure and present as an expansive or destructive cartilaginous mass. Lymphoma, metastases, infections, and inflammatory chondritis should also be considered depending on the clinical context. In a patient being monitored for multiple myeloma, a destructive lesion centered on the cartilage should raise suspicion of myelomatous involvement, especially in the presence of other active osteolytic lesions. Positron emission tomography (PET) combined with computed tomography (CT) is useful for mapping systemic disease and detecting unusual or extramedullary active sites [3], but in this case its role remains complementary: the determining factors are topographic rarity and histological evidence.

Histological confirmation is essential, as management differs depending on the diagnosis. CD138 positivity, associated with kappa light-chain restriction, supported the diagnosis of clonal plasma cell proliferation, whereas CD56 expression was consistent with a myeloma phenotype. In solitary extramedullary plasmacytoma, radiation therapy often plays a central role in local control ; in contrast, disseminated multiple myeloma requires systemic anti-myeloma therapy, with consideration of local treatment based on symptoms, respiratory risk, and local progression [9,10].

This observation also has practical implications for radiologists and otolaryngologists. A destructive lesion of the thyroid or cricoid cartilage in a patient with plasma cell dyscrasia should not be immediately considered a second primary tumor without histological evidence. Conversely, myelomatous involvement should not be diagnosed solely on the basis of the hematological profile. A multidisciplinary discussion is necessary, as laryngeal involvement may progress to dysphonia, dyspnea, stridor, or a risk of airway obstruction. The small number of published cases justifies reporting well-documented observations to better clarify the presentation, diagnosis, and management.

CONCLUSION

Involvement of the laryngeal cartilages by multiple myeloma is rare and may mimic more common laryngeal or cartilaginous tumors. This case is characterized by destructive involvement affecting the left lamina of the thyroid cartilage and the ipsilateral cricoid cartilage in a kappa-monotypic plasmablast multiple myeloma. Imaging is essential for detecting and mapping the lesion, but biopsy with immunohistochemistry remains decisive. Awareness of this rare location helps minimize diagnostic delay and guide multidisciplinary management focused on systemic control of the disease and the potential risk to the airways.

REFERENCES

1. Rajkumar SV, Dimopoulos MA, Palumbo A, *et al.,*International Myeloma Working Group updated criteria for the diagnosis of multiple myeloma. Lancet Oncol. 2014, 15 : e538-e548. 10.1016/S1470-2045(14)70442-5
2. Bladé J, Beksac M, Caers J, *et al.,*Extramedullary disease in multiple myeloma: a systematic literature review. Blood Cancer J. 2022, 12 :45. 10.1038/s41408-022-00643-3
3. Cavo M, Terpos E, Nanni C, *et al.,*Role of 18F-FDG PET/CT in the diagnosis and management of multiple myeloma and other plasma cell disorders: a consensus statement by the International Myeloma Working Group. Lancet Oncol. 2017, 18 : e206-e217. 10.1016/S1470-2045(17)30189-4
4. You WS, Bhuta S : Myeloma of laryngeal cartilage : literature review and case study. Ear Nose Throat J. 2021, 100 :NP114-NP119. 10.1177/0145561319861379
5. Van Dyke CW, Masaryk TJ, Lavertu P : Multiple myeloma involving the thyroid cartilage. AJNR Am J Neuroradiol. 1996, 17 :570-572.
6. Sosna J, Slasky BS, Paltiel O, Pizov G, Libson E : Multiple myeloma involving the thyroid cartilage : case report. AJNR Am J Neuroradiol. 2002, 23 :316-318.
7. Shimada T, Matsui M, Ikebuchi K, *et al.,*Multiple myeloma involving the thyroid cartilage. Auris Nasus Larynx. 2007, 34 :277-279. 10.1016/j.anl.2006.09.009
8. Wang M, Du J, Zou J, Liu S : Extramedullary plasmacytoma of the cricoid cartilage progressing to multiple myeloma: a case report. Oncol Lett. 2015, 9 :1764-1766. 10.3892/ol.2015.2936
9. Krebs S, Ganly I, Ghossein R, Yang J, Yahalom J, Schöder H : Solitary extramedullary plasmacytoma of the cricoid cartilage-case report. Front Oncol. 2017, 7 :284. 10.3389/fonc.2017.00284
10. Soutar R, Lucraft H, Jackson G, Reece A, Bird J, Low E, Samson D : Guidelines on the diagnosis and management of solitary plasmacytoma of bone and solitary extramedullary plasmacytoma. Clin Oncol (R Coll Radiol). 2004, 16 :405-413. 10.1016/j.clon.2004.02.007