



Dermatomyositis: A Rare Presentation of Metastatic Prostate Cancer

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PUBLISHED ABSTRACT



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ABSTRACT

Background: Dermatomyositis (DM) is an idiopathic inflammatory myopathy with various cutaneous manifestations. There is a strong association between DM and malignancy with an estimated 5–7 fold increase in cancer incidence in DM patients compared to the general population. Dermatomyositis as a paraneoplastic manifestation has been reported in several malignancies notably ovarian, gastric, colon, cervical, pancreatic, and lung cancer but rarely in prostate cancer (**Table 1**).

Case Presentation: A 64-year-old male with a past medical history of hypertension, gout, and type II diabetes was admitted to the hospital following a mechanical fall after which he sustained shoulder and facial trauma. On further evaluation, the patient was found to have dysphagia, dysphonia, proximal upper extremity and lower extremity weakness, and rashes. The dysphagia began one month prior to presentation and the rashes appeared two months prior. Physical exam was notable for erythematous and scaly-dry skin in V-neck pattern, gottron papules, facial and periorbital erythema with scaly skin, periungual erythema, oropharyngeal salivary pooling, proximal bilateral upper and lower extremity weakness with intact distal extremity strength, and wasting of the bilateral quadriceps and hamstrings. Labs were notable for elevated creatine kinase (CPK) 296, positive Anti-p155/140 antibodies which are directed against transcription intermediate family-1 (TIF-1). Further workup with a computed tomography scan (CT) of the abdomen and pelvis revealed extensive pelvic and abdominal lymphadenopathy, centered in the pelvis, and therefore suspicious for either nodal metastasis from prostate adenocarcinoma versus lymphoma. A right inguinal lymph node biopsy was done and confirmed the diagnosis of metastatic adenocarcinoma of the prostatic primary. Staging workup via bone scan and MRI showed diffuse osseous metastases in the thoracolumbar spine (**Figure 1**). Consequently, the patient was started on Bicalutamide and Leuprolide as therapy for the underlying prostate cancer by the inpatient oncology team. The neurology service was consulted for the muscle weakness and were immediately concerned for dermatomyositis. Hence, they recommended empiric treatment with steroids which were initiated and a biopsy of the left deltoid muscle was obtained. Biopsy results revealed skeletal muscle with perifascicular atrophy and mild mixed inflammatory infiltrate, suggestive of DM (**Figure 2**). Hence, in the setting of the patient's clinical presentation confirmed the diagnosis of DM likely

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KEYWORDS:

Dermatomyositis; prostate cancer; paraneoplastic; muscle weakness, metastases; malignancy

TO CITE THIS ARTICLE:

Makki I, Zheng-Lin B, Bryce C, Ahuja S, Rajeeve S, Patel V. Dermatomyositis: A Rare Presentation of Metastatic Prostate Cancer. *Journal of Scientific Innovation in Medicine*. 2021; 4(2): 31, pp. 1–4. DOI: <https://doi.org/10.29024/jsim.131>

paraneoplastic. The patient was started on intravenous immunoglobulins (IVIG) in addition to steroids for treatment of DM. The patient's hospital course was complicated by worsening dysphagia necessitating percutaneous gastric tube placement (PEG), worsening dysphonia, as well as hypoxic respiratory failure requiring a brief intensive care unit admission and non-invasive positive pressure ventilation. The patient slowly regained his speech and his respiratory status improved. He was able to be discharged to a subacute rehab after 37 days of inpatient stay. The patient is still requiring a PEG tube for feeding but his dysphagia has significantly improved, and his rashes have almost resolved. His muscle strength is slowly recovering. He continues to get IVIG sessions and steroids as well as Leuprolide injections every three months for treatment of his metastatic prostate cancer. His prostate-specific antigen (PSA) a marker that is usually elevated in prostate cancer and was markedly elevated in this patient began to downtrend significantly which usually indicates a positive response to therapy.

Conclusion: This case illustrates the importance of screening for an underlying malignancy in any patient presenting with DM. Because of the rarity of DM physicians should maintain a high index of suspicion and screen for more cancers than only those reported to be commonly associated with DM. Cases have shown that systemic manifestations of paraneoplastic DM tend to improve following treatment of the underlying malignancy.

Table 1 Reported cases of dermatomyositis associated with prostate cancer diagnosis worldwide.

AUTHORS	YEAR	AGE	SYMPTOMS AT PRESENTATION	CANCER DIAGNOSIS	TREATMENT	SYNDROME ONSET	COUNTRY	CLINICAL STATUS
Hideyuki Minagawa et al.	2021	63	erythema on the skin, and muscle weakness with severe dysphagia appeared	Metastatic prostate adenocarcinoma with neuroendocrine differentiation.	High dose steroids and chemotherapy and androgen deprivation therapy	After prostate cancer diagnosis	Japan	improved
Hee Yeon Kim et al.	2009	73	cutaneous lesions and progressive symmetric proximal muscle weakness		systemic steroid, intravenous immunoglobulin and methotrexate.	After prostate cancer diagnosis	Korea	improved
Béla Tállai et al.	2006	57	Total immobility developed in a short period of time; Purple-coloured rashes developed on his hand and face. These were the so-called heliotrope rash, Gottron's papule	Prostate cancer	High-dose methylprednisolone; and prostatectomy	Preceded prostate cancer diagnosis	Hungary	improved
Charalampos Papagoras at al.	2018	59	recurrent facial swelling and redness, accompanied by worsening fatigue during the previous 3 months	Metastatic neuroendocrine prostate cancer		preceded cancer diagnosis	Greece	deceased
Paula Renaux Caratta at al.	2011	72	only classic skin findings, which progressed to vesiculobullous lesions, and, months later, to myopathy	Prostate adenoca	Systemic steroids and chemotherapy	Preceded cancer diagnosis	Brazil	improved
SHIN-ICHI ANSAI M.D. at al.	1996	74	Severe edema of the face and periorbital region, myalgias or extremities and dysphagia	Prostate adenoca	Systemic steroids	Preceded cancer diagnosis	Japan	deceased
J. V. JOSEPH e al.	2002	63	erythematous rash on the scalp, neck, upper chest, back, extensor aspect of the elbow and gluteal region. The patient also had purple plaques over the back of his hand	Metastatic prostate Ca	Hormonal ablative therapy and steroids	Preceded cancer diagnosis	Scotland	improved
Sekine Y at al.	2004	69	general fatigue, appetite loss and facial anthers	Metastatic prostate Ca	diethylstilbestrol phosphate and prednisolone	Preceded cancer diagnosis	Japan	deceased
COLIN J MOONEY at al.	2006	72	1-month history of weakness and dull aches in his shoulders and thighs bilaterally	Metastatic prostate Ca	androgen-deprivation therapy and steroids	Preceded cancer diagnosis	USA	improved

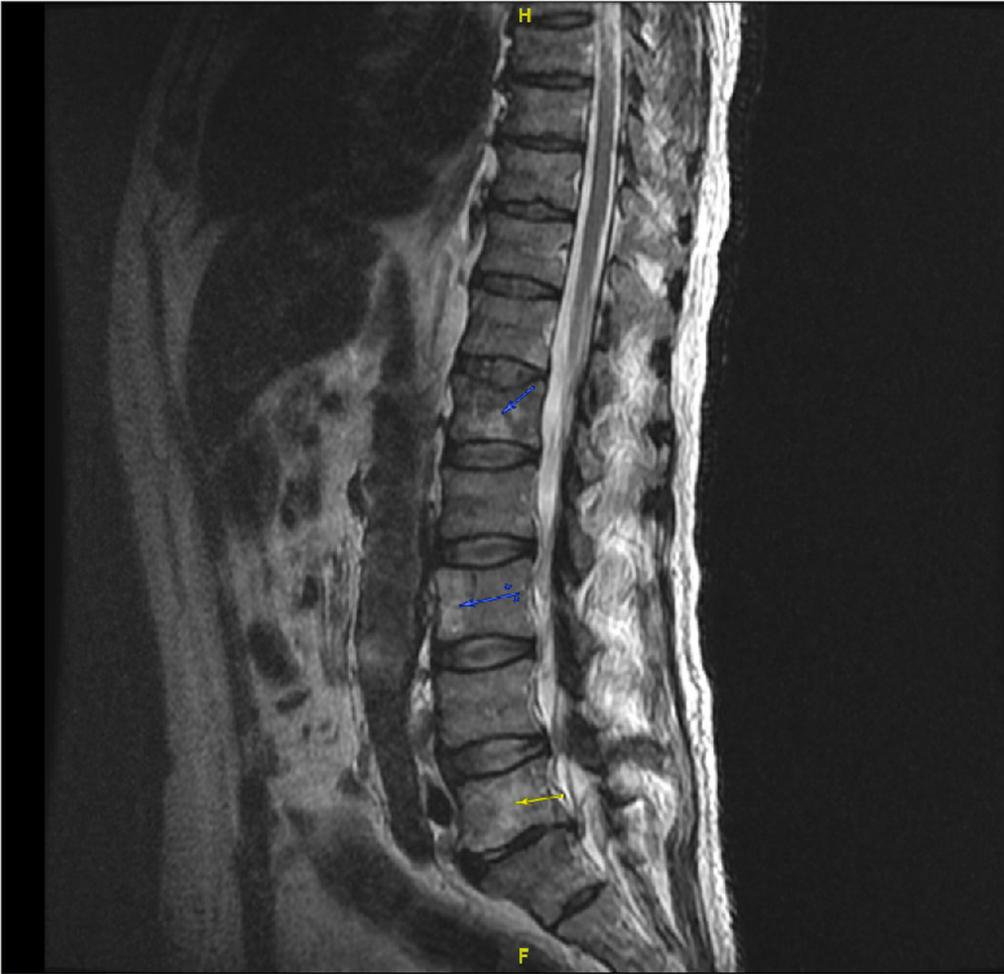


Figure 1 Multifocal enhancing osseous metastases involving the thoracolumbar. Spine without spinal cord compression.

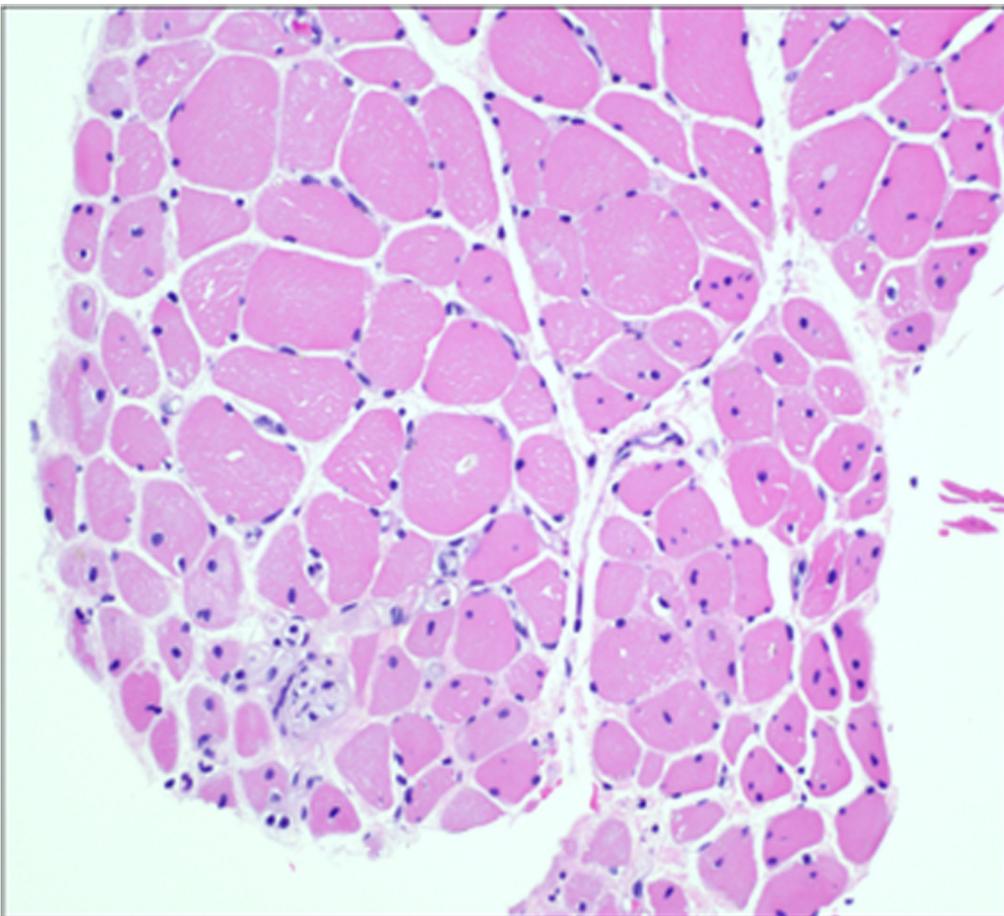


Figure 2 This H and E stained skeletal muscle with perifascicular atrophy and mild mixed inflammatory infiltrate, suggestive of dermatomyositis(40X).

COMPETING INTERESTS

The authors have no competing interests to declare.

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Submitted: 20 May 2021

Accepted: 20 May 2021

Published: 11 June 2021

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