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Groin Pain Revealing Multifocal Osteolytic Lesions and Monoclonal Gammopathy: A Diagnostic and Therapeutic Challenge

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Abstract

Groin pain with progressive loss of mobility may reflect musculoskeletal, inflammatory, neurological, or malignant disease. This case describes persistent symptoms that prompted serial imaging and multidisciplinary assessment. Pelvic MRI and whole-body PET/CT demonstrated multifocal osteolytic lesions, and serum electrophoresis showed a monoclonal protein abnormality. Bone-marrow aspiration was reported as monoclonal gammopathy of undetermined significance; however, the manuscript does not provide the quantitative marrow, laboratory, or imaging criteria required to establish active multiple myeloma. Systemic therapy directed at the suspected plasma-cell disorder was followed by symptomatic, biochemical, and radiological improvement. The case emphasizes reconciliation of imaging with International Myeloma Working Group criteria and complete documentation of treatment, toxicity, response, and consent. Until the missing data are verified, the presentation is best framed as multifocal osteolytic lesions with monoclonal gammopathy rather than confirmed metastatic multiple myeloma.

Keywords: groin pain; osteolytic lesions; monoclonal gammopathy; plasma-cell disorder; PET/CT; multidisciplinary care

Introduction

Persistent groin pain can originate from the hip, spine, pelvis, soft tissues, inflammatory disease, infection, or neoplasia. When symptoms progress despite an initial musculoskeletal explanation, the differential diagnosis should be reopened and imaging findings should be reconciled with the clinical course. In plasma-cell disorders, bone pain and osteolytic lesions may be presenting features, but neither symptom nor imaging alone establishes active multiple myeloma (1,2).

The International Myeloma Working Group defines active multiple myeloma through clonal plasma-cell evidence together with myeloma-defining events, including specified end-organ injury or validated biomarkers (2). Monoclonal gammopathy of undetermined significance is biologically related but does not by itself justify a diagnosis of active myeloma or systemic antimyeloma treatment (4,7).

Whole-body imaging is valuable for mapping skeletal involvement and guiding biopsy, yet the term metastasis should be avoided when the primary disease process has not been established. Contemporary recommendations support low-dose whole-body computed tomography, PET/CT, or whole-body magnetic resonance imaging according to the clinical question and local availability (3).

This report describes a multidisciplinary diagnostic pathway in a patient with disabling groin pain, multifocal osteolytic lesions, and monoclonal gammopathy. Its purpose is to emphasize diagnostic reconciliation, documentation of myeloma-defining evidence, and cautious interpretation of treatment response. The case is reported from the information currently available to the authors. Several source-data

elements remain necessary before the manuscript can support a definitive plasma-cell diagnosis or reproducible treatment description.

Case Presentation

The patient presented with progressive groin pain that worsened over approximately one week and eventually prevented independent mobility. Initial lumbar magnetic resonance imaging was interpreted as showing an L5 disc protrusion. A subsequent assessment considered an inflammatory rheumatological explanation, but the groin pain and functional limitation persisted despite conservative management.

Repeat pelvic magnetic resonance imaging raised concern for a malignant skeletal process. Whole-body PET/CT subsequently demonstrated multiple metabolically active bone lesions involving the cervical and lumbar spine, sternum, ischium, and other flat bones; the largest documented lesion was in the ischium. These findings prompted referral to orthopaedic oncology and haematology. Names of individual clinicians, hospitals, and exact dates have been removed to protect patient confidentiality.

[AUTHOR VERIFICATION REQUIRED: add the patient's age and sex; complete blood count; calcium and creatinine values; serum and urine protein electrophoresis with immunofixation; serum free-light-chain values and ratio; quantitative bone-marrow clonal plasma-cell percentage and immunophenotype; exact lesion sizes and imaging modality; and any tissue-biopsy result. State explicitly which International Myeloma Working Group myeloma-defining criterion was met, if any.

Serum electrophoresis was reported to show a monoclonal protein abnormality, while other tumour-marker results were described as noncontributory. Bone-marrow aspiration was reported as monoclonal gammopathy of undetermined significance. Because the current record does not include clonal plasma-cell percentage, free-light-chain results, CRAB features, or histological confirmation of a plasmacytoma, the available evidence does not independently establish active multiple myeloma (2,4).

Systemic therapy directed at the suspected plasma-cell disorder was initiated in 21-day cycles, with administrations reported on days 1, 4, 8, and 11. Treatment was modified when liver enzymes increased, and six cycles were completed before interim reassessment. Serum monoclonal-protein measurements declined, and follow-up PET/CT was described as showing resolution of some vertebral and cervical lesions and reduction of the ischial lesion.

Two additional cycles were planned or administered, with continued clinical and laboratory monitoring. The observed symptom, laboratory, and imaging changes are compatible with a treatment response, but interpretation requires the exact drug combination, doses, dates, response criteria, and follow-up interval. The report therefore avoids describing the response as proof of either the original diagnosis or complete eradication of disease.

Discussion

This case demonstrates why persistent groin pain with progressive disability requires diagnostic reassessment. An initial spinal or rheumatological finding may coexist with, rather than fully explain, skeletal symptoms. The decisive transition in this case occurred when pelvic and whole-body imaging identified multifocal bone lesions, prompting evaluation for a plasma-cell or other malignant disorder (3).

Terminology is clinically important. Multifocal osteolytic lesions may occur in multiple myeloma, metastatic solid tumours, lymphoma, metabolic bone disease, or infection. In the absence of an established primary carcinoma or histological confirmation, describing the lesions as bone metastases presupposes a diagnosis that the reported data do not prove.

The reported monoclonal gammopathy increases suspicion for a plasma-cell disorder, but monoclonal gammopathy of undetermined significance and active multiple myeloma are separated by marrow burden, myeloma-defining biomarkers, and end-organ injury attributable to the plasma-cell process (2,4,7). A definitive manuscript should therefore present the complete diagnostic dataset and explain the multidisciplinary consensus that led to treatment.

The treatment schedule resembles commonly used antimyeloma protocols, yet a schedule alone is not reproducible (6). The generic term targeted therapy should be replaced by the names, routes, doses, dose modifications, supportive medicines, and number of cycles. The reported liver-enzyme elevation should be expressed as measured AST and ALT values with units, grading, clinical interpretation, and management.

Response should be reported using prespecified clinical, biochemical, marrow, and imaging criteria. A decline in the serum monoclonal component and improvement on PET/CT are encouraging, but they should be quantified and dated. Resolution of tracer uptake is not synonymous with disappearance of all

neoplastic cells, and residual ischial abnormality warrants continued surveillance.

Multidisciplinary input was a strength because orthopaedic, radiological, rheumatological, oncological, and haematological findings required integration. Equally important is communication with the patient when a possible malignancy is raised before the diagnosis is secure.

The principal limitation is incomplete source documentation. Patient demographics, original images and reports, marrow findings, laboratory values, drug details, and standardized response measures are absent from the current manuscript. These omissions limit diagnostic certainty and generalizability.

Before publication, the authors should verify the chronology against the medical record, de-identify all institutions and clinicians, and provide written patient consent for publication in accordance with case-report guidance (5). The educational value of the case lies in disciplined reassessment and diagnostic reconciliation, not in claiming a confirmed diagnosis or therapeutic success beyond the evidence presented.

Conclusion

Persistent groin pain accompanied by multifocal osteolytic lesions and monoclonal gammopathy warrants coordinated imaging, laboratory, marrow, and, when indicated, tissue evaluation. The available information supports a suspected plasma-cell disorder with an observed response to systemic therapy, but it does not yet document the criteria required to label the case active multiple myeloma. Verification of the diagnostic evidence, exact regimen, adverse events, response measures, and patient consent is essential before publication.

Declarations

Author contributions: Nur Ilahi Anjani conceptualized the case report, compiled the clinical chronology, and prepared the original draft. Abqariyatuzzahra Munasib contributed to the interpretation of the diagnostic findings and critically revised the manuscript. Rizky Patria Nevangga contributed to the interpretation of the therapeutic course and critically revised the manuscript. All authors read and approved the final manuscript.

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