

Philadelphia Chromosome–Positive Chronic Myeloid Leukemia in a Patient with Recurrent Chondrosarcoma and Initially Negative Molecular Testing: A Diagnostic Challenge

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INTRODUCTION

- CML is a clonal myeloproliferative neoplasm driven by t(9;22)(q34;q11.2) and the BCR::ABL1 fusion [1,2].
- Diagnosis uses RT-PCR, FISH or karyotyping [2]; atypical breakpoints, cryptic insertions and rare transcripts can give false-negative results [3,4].
- CML arising with recurrent chondrosarcoma [5] is rare.

CASE PRESENTATION

- 44-year-old male, recurrent left-knee chondrosarcoma (surgery + radiotherapy 2018, 2021); surgery deferred for marked leukocytosis.
- Fever, left upper quadrant pain, splenomegaly.
- Blood film: neutrophilic leukocytosis with left shift, eosinophilia, basophilia, ~3% myeloid blasts (flow cytometry). Treated with cytoreduction, followed by tyrosine kinase inhibitor.

DIAGNOSTIC WORK-UP

RT-PCR NEGATIVE BCR::ABL1	FISH T(9;22) NEGATIVE (q34;q11.2)	BONE MARROW MPN features Hypercellular; granulocytic and megakaryocytic hyperplasia	KARYOTYPE (GTG) 46,XY,t(9;22)(q34;q11.2) [17]/46,XY[3] Ph+ CML Chronic phase confirmed
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DISCUSSION

- Integrate morphology, cytogenetics and molecular studies when evaluating myeloproliferative disorders [3,4].
- Routine RT-PCR targets common e13a2 / e14a2 transcripts; rare variants (e1a3, e13a3, e14a3, e19a2) may be missed, and cryptic rearrangements can be FISH-negative [6,7].
- Leukocytosis delayed orthopedic management [5], but arose from an underlying myeloid neoplasm, not the solid tumor.

CONCLUSION :

CML diagnosis integrates clinical findings, blood morphology, marrow, cytogenetics and molecular studies.

- Negative RT-PCR and FISH do not exclude CML when suspicion is high; karyotyping remains valuable.
- Consider a concurrent hematologic malignancy when unexplained blood count abnormalities occur in patients with known cancer.

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