Volume 10, Issue 3, March – 2025 International Journal of Innovative Science and Research Technology
ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25mar064

Non-Traumatic Urinary Bladder Hematoma Secondary to Myelodysplastic Syndrome: A Rare Case Report

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Publication Date: 2025/03/17

Abstract: A 76-year-old male patient presented with a 4-5 day history of urinary tract infection symptoms and two days of hematuria with clot formation. The patient was treated briefly with transfusions at an outside hospital. He is a known diabetic and hypertensive for 20 years, had a cerebrovascular accident 9 years ago, and had multiple hospitalizations and transfusions due to undiagnosed persistent thrombocytopenia and anemia for 3 to 4 years. General physical examination is unremarkable. Routine lab tests, Urine microscopy and culture, Ultrasonography and Bone marrow examination (BMA) were performed. The BMA and biopsy revealed Normomegaloblastic hypercellular marrow with trilineage dysplasia, suggestive of Myelodysplastic syndrome (MDS). MDS cytogenetics (FISH) was positive for Monosomy 7. Despite comprehensive supportive management, the patient's clinical condition progressively worsened.

Keywords: *MDS , Monosomy 7, Urinary Bladder Hematoma.*

How to Cite: Dr. Devyani Khorate; Dr. Suvarna Pai; Dr. Pritam Bhatmare (2025) Non-Traumatic Urinary Bladder Hematoma Secondary to Myelodysplastic Syndrome: A Rare Case Report. *International Journal of Innovative Science and Research Technology*, 10(3), 181-184. https://doi.org/10.38124/ijisrt/25mar064

I. INTRODUCTION

Myelodysplastic syndromes (MDS) are a group of hematopoietic stem cell disorders marked by ineffective blood cell production and cytopenia. In India, the reported incidence of MDS is approximately 3 per 100,000 individuals, while the global prevalence stands at around 7 per 100,000. Most common presentation is anemia [1].

II. CASE REPORT

A 76-year-old male was referred to our center with symptoms of urinary tract infection since 4 to 5 days and hematuria with clots since 2 days. Patient was treated briefly with transfusions at an outside hospital.

He is a known diabetic and hypertensive since 20 years, had cerebrovascular accident 9 years ago, had multiple hospitalizations and transfusions due to undiagnosed persistent thrombocytopenia and anemia since 3 to 4 years. General physical examination was unremarkable.

A. Investigations:

Routine lab tests at admission showed WBC count of 13,400x103/uL, Hemoglobin of 4.6gm/dl and Platelet count of 1,57,000cells/cumm. Urine microscopy revealed significant number of RBCs and WBCs. Urine culture was positive for Klebsiella Oxytoca. The USG abdomen-pelvis demonstrated Cystitis with thick dependent echogenic debris within urinary bladder; suggestive of blood clots. (Fig 1)

Provisional diagnosis of Urinary tract infection with bladder hematoma and refractory cytopenia was made.

B. Management:

Patient was treated empirically with intravenous ceftriaxone and intravenous fluids along with 3 pints of RBC and 4 pints of platelet transfusions which enhanced his hemoglobin level from 4.6 to 9.7gm/dl. He was then planned for cystoscopic bladder hematoma evacuation. Meanwhile, on Day 3 his platelet count dropped significantly to 81,000cells/cumm from1,57,000cells/cumm and since patient had past history of persistent thrombocytopenia and anemia, an intraoperative Bone marrow aspiration (BMA) and biopsy was performed along with cystoscopic urinary bladder hematoma evacuation. During evacuation neither injury nor any abnormality was detected in the urinary bladder and thus it was concluded to be a spontaneous hematoma (Fig 2).

Bone marrow aspiration and biopsy revealed normomegaloblastic hypercellularity with trilineage dysplasia, indicative of Myelodysplastic Syndrome (MDS), a disorder affecting hematopoiesis (Fig 3, 4). Further, heparinized bone marrow aspirate was sent to an outside lab for MDS cytogenetics by FISH which revealed Monosomy7 positivity in multiple clones in 70% of bone marrow cells.

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III. RESULTS

Urosepsis with bladder hematoma secondary to Myelodysplastic syndrome.

❖ *Patient Outcome*

Patient's condition deteriorated despite all the supportive care. Patient was discharged on 18th day of admission against medical advice with Platelet count of 23,000cells/cumm and Hemoglobin of 7gm/dl.

He passed away within 2 days of discharge;

A. USG abdomen-pelvis (fig 1):

- Large, well defined, bladder hematoma (yellow arrow)
- Hyperechogenic area consistent with blood clots (red arrow)
- Normal urine within bladder lumen (white arrow).

B. Cystoscopic bladder hematoma (fig 2) evacuation shows extensive Blood clots.

C. Bone marrow aspirate (fig 3)

- Hypercellular marrow (80%) with dysplastic changes affecting all three hematopoietic lineages,
- Erythroid series show megaloblastic dyserythropoiesis, nuclear budding, intranuclear budding and delayed maturation of nuclei.
- Myeloid cells show maturation arrest at metamyelocyte stage with reduced number of mature granulocytes. Myeloid cells are hypogranular and hyposegmented. Increase in blast cells (8%).
- Megakaryocyte are adequate in number with >10% showing features of micromegakaryocytes and multinucleation.

D. Bone marrow trephine biopsy (fig 4)

- Markedly hypercellular marrow with disorganized haematopoiesis
- Dysplastic megakaryocytes with nuclear atypia
- Abnormal localization of erythroblasts.

IV. DISCUSSION

Median age at diagnosis in Indian population is 65 years [1].

- The patient in this case presented with persistent cytopenia for 3 to 4 years but was not worked up for MDS elsewhere
- Bone marrow aspiration showed 8% blast cells.
- This case highlights that non-traumatic spontaneous bladder hematoma may be an initial presentation of MDS, in context of immunological deregulation of Myelodysplasia, particularly in patients with prolonged cytopenia, patient who has not been diagnosed before and not treated for MDS before.
- MDS represents a diverse spectrum of hematological malignancies, influenced by aberrant hematopoietic stem cell activity, immune dysfunction, and genomic instability [2].
- Non traumatic spontaneous bladder hematoma can appear with some other rare conditions like Hemophilia, irradiation and urinary retention [2].

V. IMAGES

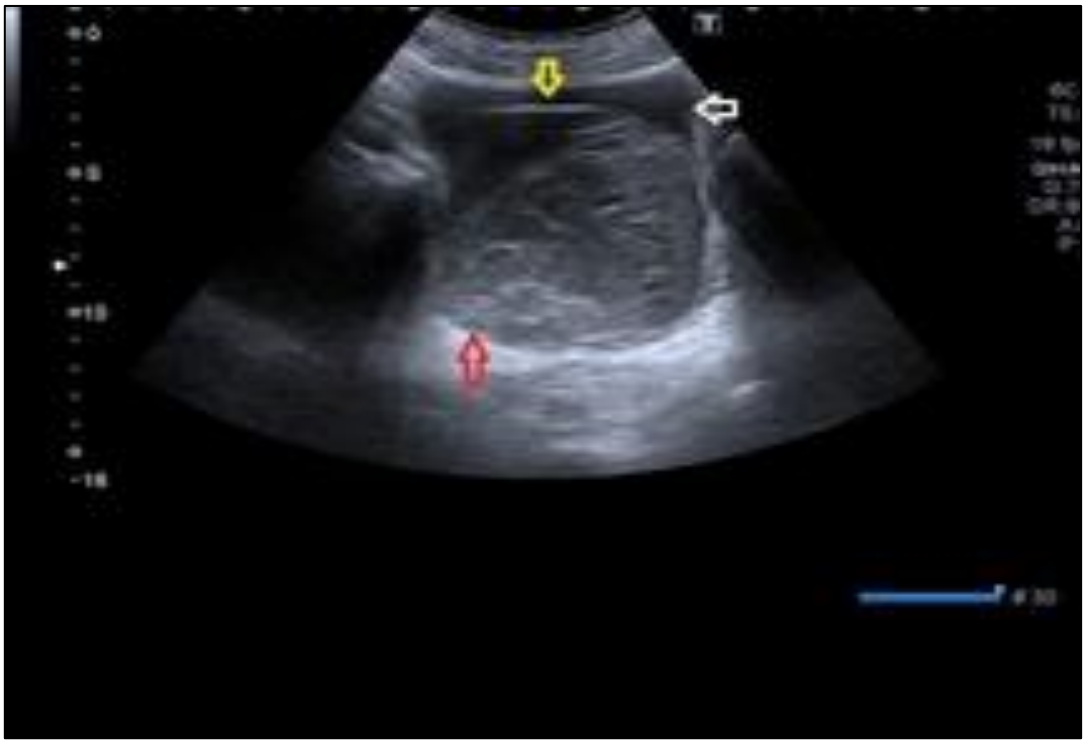

Fig 1: Ultrasound Imaging of Bladder Hematoma in MDS-Associated Urosepsis

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Fig 2: Cystoscopic Visualization and Evacuation of Spontaneous Bladder Hematoma

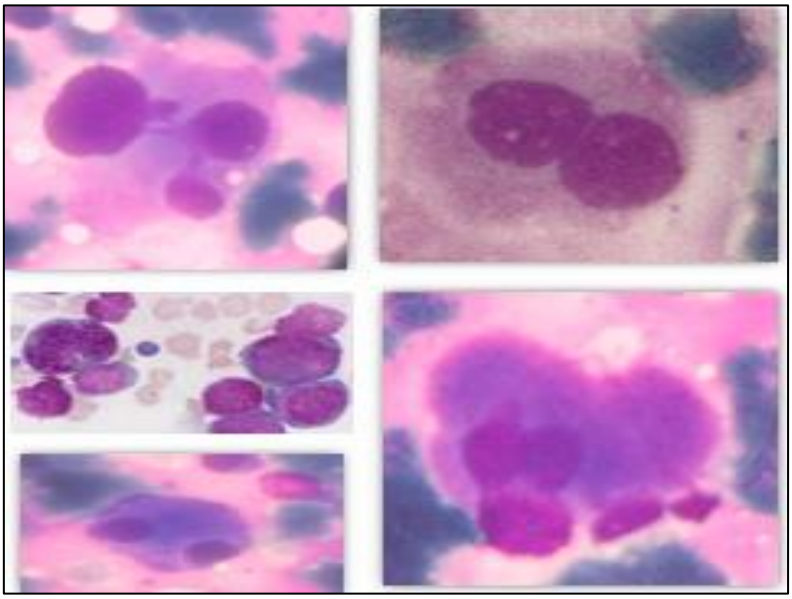

Fig 3: Bone Marrow Aspirate Findings in Myelodysplastic Syndrome with Monosomy 7

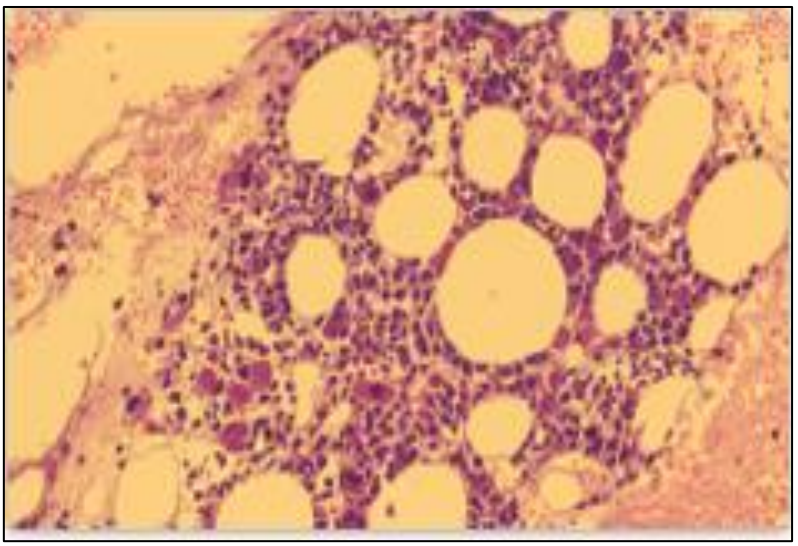

Fig 4: Bone Marrow Trephine Biopsy showing Myelodysplastic Syndrome with Trilineage Dysplasia

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VI. CONCLUSION

MDS encompasses a range of rare hematological disorders with complex etiologies. Early diagnosis through comprehensive investigations is crucial for effective disease management. While supportive therapies offer symptomatic relief, allogenic hematopoietic stem cell transplantation remains the only curative option. Our case presented here is a unique finding in our observation, needs thorough study and this article further adds to the existing literature.

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