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PRIAPISM CASE REPORT ON CHRONIC MYELOCYTIC LEUKEMIA WITH WINTER PROCEDURE MANAGEMENT

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ABSTRACT
Objective: We reported a case of priapism fracture in chronic myelocytic leukemia performed winter procedure Case presentation: We reported a 22-year-old male patient with complaints of erect penis continuously for 3 days without being affected by sexual stimulation. The patient feels pain in his penis and can still urinate. The patient denied any previous history of penile trauma, drug use, and similar complaints. Physical examination found an erect penis with EHS 4 and palpable corpus cavernosum stiff and soft. Routine blood support tests show an increase in leukocytes up to 367,000/µL. Examination of peripheral blood images shows an increase in the number of all types of granulocytes from young cells to blast cells with the effect of a chronic leukemia. Intracavernous blood gas analysis showed pH 7.2, pO2 25 mmHg, and pCO2 75 mmHg. Based on data obtained from the anamnesis, physical examination, and supporting examinations, a diagnosis of ischemic or low flow priapism was established. The patient was treated with cavernous blood aspiration using the winter procedure and combined with intracavernous irrigation using the α phenyleprine agonist. Discussion: The patient performed a winter procedure using two 18G needles for cavernous blood aspiration and combined with intracaevernose irrigation using phenylephrine 1 mg diluted saline. Intracavernous blood aspiration gets 40 mL of blood. The action was performed in the operating room for 2 hours with the result of the penis being detumescence with EHS 2. The patient is observed for 2 days and then referred to a hospital with internal medicine specialist facilities, hemato-oncology consultants for further management related to CML. Conclusion: Ischemic type priapism or low flow is a urological emergency that can be managed with winter procedures and shows good outcomes.

INTRODUCTION

Priapism is a rare case of urological emergency (Manjunath et al., 2018). Priapism is defined as the condition of a continuously erect penis for more than 4 hours in the absence of sexual stimulation (Yafi et al., 2015). The incidence of priapism is 0.7 cases out of 100,000 men in a year.[2] Priapism is found in 1-5% of men with leukemia (Al-Lahseh et al., 2010).[1] CML accounts for 50% of all leukemia cases as a cause of priapismus (Ali et al., 2021). However, priapism only appears in 1-2% of all CML cases in men (Ali, 2021). There are 3 categories of priapism, namely ischemic, non-ischemic, and recurrent (Levey et al., 2012). Ischemic priapism, also referred to as veno-occlusive or low flow priapism, is a persistent erection condition characterized by a rigid corpus cavernosum with little or no arterial blood flow (García et al., 2023). Ischemic priapism can occur with CML as its etiology (Amalia et al., 2023).[3] The clinical manifestations of ischemic priapism are an erect penis, stiff corpus cavernosa, and pain (Fantus et al., 2023). The diagnosis of priapism can be established using anamnesis, physical examination, and supporting examinations (Lotti et al., 2023). Physical examination includes inspection and palpation of the penis to determine the degree of stiffness or rigidity, involvement of the corpus cavernosum,

degree of pain (Huang et al., 2023). Supporting examination with intra corpus cavernosum blood gas analysis can determine the type of priapism that occurs (Clayton, 2023). In patients with ischemic priapism, dark red intra corpus cavernosum blood with a PH of ≤7.25, pO_2<30 mmHg, and pCO_2>60 mmHg is obtained (Rahimi et al., 2021). We reported cases of CML-induced ischemic priapism with aspiration and irrigation of the corpus cavernosum using winter procedures combined with intracavernous injection of α agonist. The treatment showed good results with the result of the penis being detumescence with EHS 4 to 2 (Masuku et al., 2020).

Case presentation

A 22-year-old man came to the Emergency Department complaining of an erect penis 3 days before entering the hospital (Porta et al., 2018). The penis erects suddenly and the erection is not affected by sexual stimulation (Hameed et al., 2023). Penis pain is felt. No hard complaints BAK. The patient denies a history of diabetes mellitus, hypertension, heart disease, and blood disorders. There is no history of spontaneous bleeding or complaints of long-healed wounds (Shrestha et al., 2022). The patient has no history of allergies and denies a history of drug consumption (Singleton et al., 2023). The patient denied a history of trauma and complaints like this before (Miller et al., 2023). Examination of vital signs within normal limits. Physical examination obtained enlarged spleen Schufner. Physical examination of the penis appears circumcised, erect penis, invisible hematoma and deformity (Figure 1). There is no visible discharge of blood from the tip of the penis. The scrotum and testicles found no abnormalities. Routine blood tests show an increase in leukocytes up to 367,000/µL. Examination of peripheral blood images shows an increase in the number of all types of granulocytes from young cells to blast cells with the effect of a chronic leukemia. Intracavernous blood gas analysis showed pH 7.2, pO_2 25 mmHg, and pCO_2 75 mmHg. The patient was diagnosed with ischemic priapism and suspected CML.

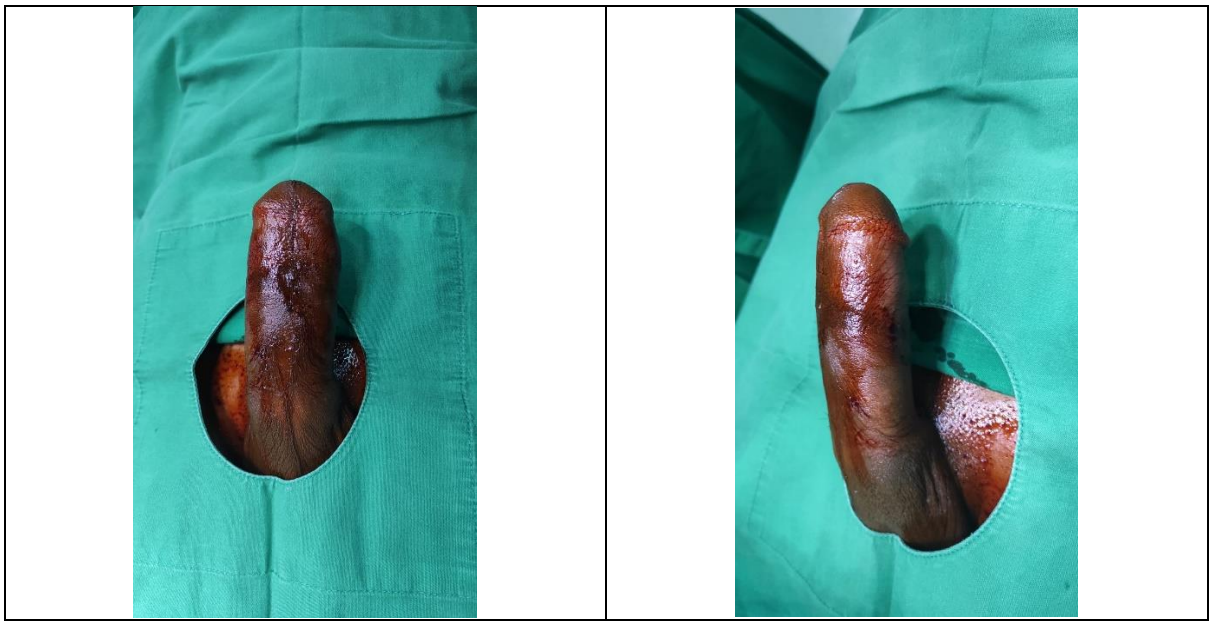

Figure 1. Clinical photo initials

The patient was immediately subjected to aspiration and irrigation of the corpus cavernosum using the winter procedure and combined with intra corpus cavernosum α injection of an agonist (phenileprine). The winter procedure is performed using an 18G needle inserted in the glade of the

penis at 10 o'clock and 2 o'clock. (Fig. 2) Dark red blood was seen, aspiration and massage were carried out slowly until blood came out as much as ± 40cc. Drainage is done slowly until penile detumescence. In addition, the penis is also injected phenileprine that has been dissolved normally saline with a concentration of 100µg / mL up to a total dose of 1 mg every 3-5 minutes. The patient was hospitalized for 2 days with EHS evaluation 2. (Fig. 3)

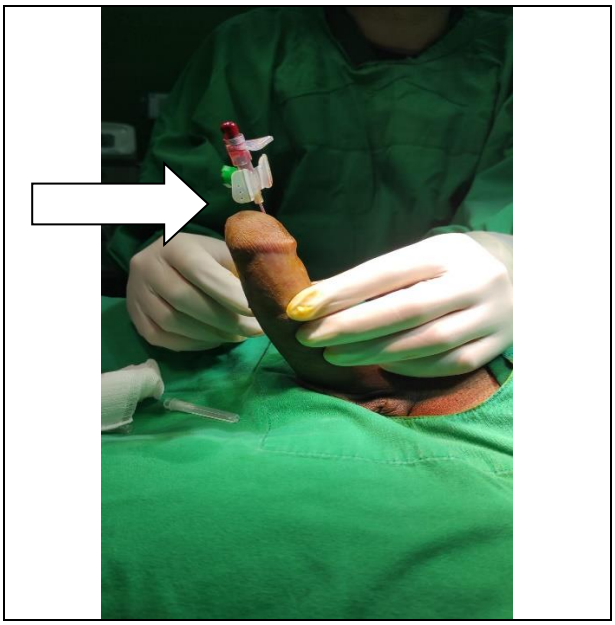

Figure 2. Clinical photo of intraoperative winter procedure with 18G needle on penile gland

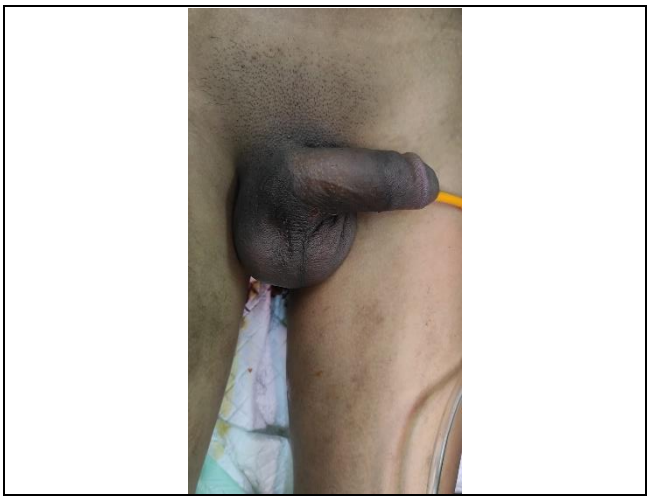

Figure 3. Clinical photo of penis post winter procedure

Case discussion

Priapism is a urological emergency that requires immediate treatment to prevent complications such as erectile dysfunction. Priapism appears as a result of an imbalance between arterial blood supply and venous backflow. Some factors that can cause are idiopathic, hemolytic dyscrasia, infection, metabolic disorders, neurological disorders, malignancy, treatment.[5,6] Hemolytic dyscrasia such as sickle cell disease, thalassemia, leukemia, multiple myeloma and so on.[5,6] Priapism is found in 1-5% of men with leukemia.[1] CML accounts for 50% of all leukemia cases as a cause of priapismus. However, priapism only appears in 1-2% of all CML cases in men.[1] In this case report is priapism that arises due to the underlying disease CML.

Establish the diagnosis in priapism patients through anamnesis, physical examination, and supporting examinations. Anamnesis that can be extracted from patients is the level of pain level, duration of erection, history of pelvic trauma, history of use of drugs such as antihypertensives, anticoagulants, antidepressants, alcohol, marijuana, cocaine, vasoactive agents intracavernous injection, and as well as a history of blood disorders. In these patients obtained pain levels with VAS 7-8, erection duration for 3 days (72 hours), without a history of trauma, drug use, and blood disorders.

Physical examination of the abdomen found an enlarged spleen Schufner 5. On physical examination, the penis appears erect with palpable pain, the corpus cavernosum stiff (EHS 4) but the corpus spongiosum and glans penis palpation are soft. Physical examination leads to an ischemic type priapism.

Supporting examination of intra corpus cavernosum blood gas analysis is performed to distinguish between ischemic type priapism and non-ischemic type. In patients with ischemic priapism, dark red intra corpus cavernosum blood with a PH of ≤7.25, pO_2<30 mmHg, and pCO_2>60 mmHg is obtained.[3] While the opposite in non-ischemic priapism patients obtained bright red intra corpus cavernosum blood with a pH of 7.4, pO_2>90 mmHg, and pCO_2<40 mmHg.[3] In this patient, the results of pH 7.2, pO_2 25 mmHg, and pCO_2 75 mmHg were obtained which led to ischemic priapism. Supporting examination to determine the etiology of priapism through routine blood tests that show an increase in leukocytes up to 367,000 / µL. Examination of peripheral blood images shows an increase in the number of all types of granulocytes from young cells to blast cells with the effect of a chronic leukemia. Further tests are needed such as BMP examination or bone marrow aspiration.

Acute ischemic priapism is a urological emergency that requires immediate intervention. The goal of its management is to restore the penis to be flactid, painless, and prevent damage to the

corpus cavernosum. Decompression of the corpus cavernosum can improve blood circulation which will further relieve pain and restore the condition of acidosis and anoxia caused by the condition of priapism itself.[7] One decompression technique for performing corpus cavernosum blood aspiration is through the glans penis, a winter procedure. The International Society for Sexual Medicine Standard Committee recommends that shunting be considered in priapism lasting ≤ 72 hours.[5] In this patient, winter procedures show dark red blood, aspiration and massage are carried out slowly until blood comes out as much as ± 40cc. Drainage is done slowly until penile detumescence and aspiration blood become bright red. In addition, there is also the option to inject sympathomimetic agents intara corpus cavernosum such as phenileprine, ethylepine, ephedrine, epinephrine, norepinephrine and methanol.[5] The phenileprine sympathomimetic agent was chosen because it selectively affects α_1-adrenergic receptors and does not affect β receptors in the heart.[8] Phenileprine is reconstituted normal saline with a concentration of 100-500µg/mL, administered at a dose of 1 mL every 3-5 minutes intra corpus cavernosum with a maximum dose of 1 mg with an administration time of not more than 1 hour.[5] In these patients phenileprine injection intra corpus cavernosum dissolved normal saline at a concentration of 100µg/mL up to a total dose of 1 mg every 3-5 minutes. Evaluation of vital signs during phenileprine administration is stable and does not show any side effects.

Data shows an unfavorable prognosis after shunting procedures in cases of prolonged erections.[9] Priapism that occurs >36 hours can cause irreversible structural and functional damage to the erectile tissue of the penis.[10] Although shunting in priapism patients that occurs > 36 hours does not have a good prognosis, it can reduce pain in patients. After the procedure, patients said pain was reduced with VAS 3-4. Surgical management is immediately chosen in this case in accordance with previous studies that suggest surgical intervention to reduce complications and optimize outcomes. The patient was hospitalized for 2 days with EHS evaluation 2. Furthermore, the patient is referred to a hemato-oncology consultant specialist for systemic management related to CML.

CONCLUSION

Priapism is a rare case but has a high complication rate. Priapism requires appropriate and quick action. Diagnosis using anamnesis, physical examination, and directed supporting examinations can determine the underlying disease of priapism. Surgical treatment with the winter procedure and combined with intra-corpus cavernosum injection using phenileprine showed improvement in pain in patients and can restore the penis to flaccid condition.

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