Case Report

Fibrinolytics in loculated abscess cavities - A report of two cases

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ABSTRACT

The efficacy of fibrinolytic therapy in two loculated abscesses is being reported. First case had a postoperative mediastinal abscess in left paraspinal location and the second case had two bilateral tubercular psoas abscesses. Both cases were managed with pig tail catheter drainage of abcesses and fibrinolytic therapy with instillation of urokinase followed by aspiration. Both cases had significant drainage, clinical and radiological resolution. There were no adverse effects in either case.

KEY WORDS: Chest X-ray, etiology, hyperlucent lung, unilateral

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INTRODUCTION

Percutaneous abscess drainage is a widely accepted method of treatment of an accessible abscess. Consistently, poor results have been reported by various authors due to presence of infected hematomas or presence of thick, viscous, and purulent material.[1] Several studies have proven the potential benefit of fibrinolytic therapy for treating abscesses, especially those with thick purulent material, old blood, or loculations.[1-3] The present report of two cases highlights the efficacy of fibrinolytic therapy in loculated abscesses. To the best of author's knowledge, this kind of therapeutic intervention in loculated abscess cavities has not yet been reported from India.

CASE REPORTS

Case 1

A 14-year-old girl underwent excision of the posterior mediastinal tumor (ganglioneuroma). Three weeks later, she reported with high grade fever, vomiting, and backache. On admission, chest radiograph revealed mediastinal abscess in left paraspinal region [Figure 1]. She was started on broad spectrum antibiotics and drainage of the abscess was established by 10 F pig tail catheter under ultrasonography guidance. After initial 50 ml drainage of thick, viscous and purulent material, there was no subsequent drainage, and she continued having fever. Repeat ultrasonography revealed a residual collection with thick internal septations. Injection Urokinase (UK) 100,000 IU in 25 ml normal saline was instilled into abscess cavity 8th hourly. Total 3 doses were given with a dwelling time of 2 h between each dose. The total net drainage was 150 ml of thick purulent material. There was significant improvement in her symptoms. Repeat chest radiograph showed significant resolution [Figure 2].

Case 2

A 25-year-old male presented with complaints of cough with purulent expectoration, low grade fever and low backache of 1 month duration. Chest radiograph and

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computed tomography scan revealed features of volume loss on left side with fibronodular opacities. Radiograph of thoracolumbar spine, ultrasonography and magnetic resonance imaging (MRI) [Figure 3] revealed bilateral psoas abscess. He was started on antitubercular treatment and pigtail catheters were placed under ultrasonography guidance in both abscess cavities. 150 ml and 60 ml of viscid, thick and purulent material was drained from right and left pigtail catheters respectively. Repeat ultrasonography revealed no residual collection on right side and a significant collection with thick internal septations on left side. Right pigtail catheter was removed. Three doses of injection UK 50,000 IU each in 25 ml of normal saline were instilled 8th hourly with a dwelling time of 2 h between each dose through the left pigtail catheter. There was a net total drainage of 200 ml of thick purulent material. Subsequent ultrasonography revealed no residual collection and left pigtail catheter was also removed. His anti-tubercular treatment was continued. His repeat MRI of thoracolumbar spine after 6 months revealed complete resolution of bilateral psoas abscesses [Figure 4].

DISCUSSION

Fibrinolytics in loculated pleural collection due to pneumonia, empyema and tuberculosis have been in use for long time in abroad[4] and for last few years in India.[5] The rationale for the use of fibrinolytics for treating abscesses outside the pleural space is almost the same and was first suggested by Haaga.[6] Park *et al*.[7] and Lahorra *et al*.[3] Since purulent material in loculated abscesses contains a high level of fibrin, fibrinolytics (STK or the UK) injected into purulent material retains its enzymatic properties and splits the fibrin thereby breaking the loculations.[3] Initially believed to be effective in reducing the viscosity of pus also,[7] presently as per the recent evidence DNAse and not fibrinolytics, decrease the viscosity of pus[8] and the present status of fibrinolyticsis is mostly limited to breaking of loculations within the abscess cavity. Our both cases had loculated abscesses as evidenced by insignificant drainage in spite of catheter being *in situ* and significant amount of fluid in abscess cavity as assessed by ultrasonography.

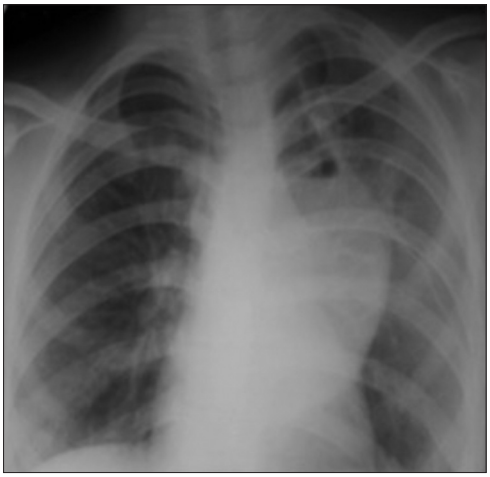

Figure 1: Chest radiograph showing mediastinal abscess

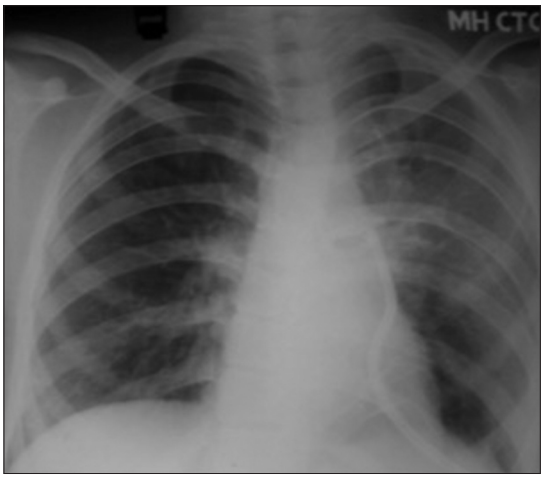

Figure 2: Chest radiograph showing pigtail catheter in abscess and resolution of abscess

Figure 3: Magnetic resonance imaging showing bilateral psoas abscesses

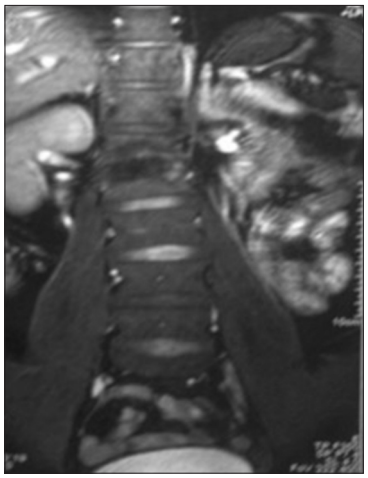

Figure 4: Magnetic resonance imaging showing resolution of psoas abscesses

Reported dosing regimens for intracavitary fibrinolytic agents have been variable without any clear consensus or evidence favoring one protocol over another. Haaga *et al*.[1] based their protocol for abdominal abscesses on abscess size, with a dose of 12,500 IU for UK for cavities up to 3 cm in diameter, 25,000 IU for those of 3–5 cm in diameter, 50,000 IU for a 5–10 cm diameter, and 100,000 IU for those >10 cm in diameter. The doses were administered every 8 h for 4 days with a clamp time of 15 min after each administration. We used dose of 100,000 IU and 50,000 IU of UK based on abscess size of 12 cm and 8 cm in case one and two respectively with a dwelling time of 2 h in 8 hourly dosages based on protocol used by Haaga *et al*.[1] There was an excellent response in both the cases without any adverse effects. There are no hamorrhagic complications of this therapy.[3] Absolute contraindications to fibrinolytic therapy include previous intracranial hemorrhage, ischemic stroke within 3 months and active bleeding or bleeding diathesis. The relative contraindications are systolic blood pressure more than 180 mmHg, major surgery within <3 weeks, pregnancy, current use of anticoagulants and active peptic ulcer.

CONCLUSION

Instillation of fibrinolytic agent in loculated abcess cavities facilitates drainage and is a safe, simple and cost effective adjunctive therapy.

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Conflicts of interest
There are no conflicts of interest.

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