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Incidence of discitis in endoscopic spine surgery

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Abstract---Aim of the study was to retrospectively evaluate the incidence of discitis amongst patients undergoing endoscopic spine surgery. Material and Methods: A total of 116 patients were included in the study which underwent endoscopic discectomy. Patients were followed up in postoperative period for any backpain. They were evaluated clinically and were subjected to laboratory and radiological investigations to establish the diagnosis of postoperative discitis. Patients were given IV antibiotics initially for 4 weeks and those not responding to treatment were treated by surgical intervention. All the patients were followed up clinically, by laboratory investigations and MRI. RESULTS: Out of 116, two patients suffered from postoperative discitis. One of them responded to medical management whereas the other one required surgical debridement. CONCLUSION: Discitis following endoscopic discectomy is although a rare complication. But whenever encountered should be treated aggressively with appropriate IV antibiotics and if needed surgical intervention should be resorted to as well.

Keywords---incidence, endoscopic, spine surgery.

Introduction

Surgical treatment of the disc disease has evolved from traditional open spine surgery to endoscopic spine surgery. Endoscopic spine surgeries can be performed with various endoscopic techniques for lumbar, cervical and thoracic regions. Advantages of endoscopic spine surgery is less tissue dissection and subsequent muscle trauma, reduced blood loss, less damage to the epidural blood supply and consequent epidural fibrosis and scarring, reduced hospital stay,

early functional recovery and improvement in the quality of life . Initially, endoscopic technique was restricted to the lumbar region but now it is also being done for cervical and thoracic disc herniations .As the scope of endoscopic spine expands so does the rate and incidence of complications. It is believed that endoscopic spine surgery is associated with less tissue manipulation ,lesser surgery time , less disruption of blood supply hence lesser rates of postoperative complications. However occurrence of postoperative complications like discitis cannot be completely ruled out. Our retrospective study aims to find the incidence of postoperative discitis amongst patients treated with endoscopic spine surgery.

Material and Methods

This was a retrospective study conducted in mannat hospital sundernagar .Total of 116 patients were enrolled in the study. All of the patients had undergone endoscopic lumbar discectomy. The age of the patients ranged from 18 years to 85 years. Out of them 54 percent were males and 46 percent were females. Any patient complaining of unremitting pain post-endoscopic discectomy usually five to seven days post procedure after intial pain free period not responding to routine analgesia were suspected and investigated for discitis. Investigations included complete blood count, ESR,CRP and diagnosis was confirmed with plain and contrast enhanced MRI.Any post-operative patient with unremitting pain post endoscopic discectomy and having elevated blood counts,ESR , and CRP were diagnosed as case of discitis and were treated as per the standard protocol. Empirical antibiotic treatment (vancomycin /linezolid +ceftriaxone and amikacin were started immediately and patient was put on complete bed rest for 4 weeks. Patient was kept on conservative treatment for 6 weeks and routine blood investigations were done periodically to evaluate and keep track of patients recovery.

And patients who improved were managed conservatively for 6 weeks. Patients who did not improve clinically by 4 weeks of aggressive antibiotic treatment were treated with surgical intervention in form of endoscopic debridement of intervtrbral disc. The surgical procedure was performed by using a 7mm cannula inserted over a guide wire after placing the guide wire fluoroscopically. Under all aseptic precautions patients were taken for surgery.Fluoroscope was used for the whole procedure to confirm for the proper placement of surgical instruments.Once the cannula is in disc space ,a disc punch is used to debride and debulk the disc . The retrived material was sent for histopathology, culture and sensitivity



MRI images of patients with postoperative discitis

Table 1
Patient Characteristics

Pt. characteristics	No. Of patients
sex	
Male	63
Female	53
Level of primary surgery	
L4/L5	73
L5/S1	43

Table 2
Laboratory investigations

ESR(Normal Range0-20mm)	No of patients
<20mm	20
20-50mm	60
>50mm	36

Table 3

CRP(Normal 0-10mg/ml)	No of patients
<10	1
10-100	88
>100	27

Results

Out of 116 patients two suffered from postoperative discitis. Both of them had single disc involvement corresponding to L4-5 and L5-S1 respectively. Severe back pain was the presenting symptom. Blood culture was sterile in both the

patients. Biopsy from the culture site showed growth of staph aureus. IV antibiotics were given in both cases along with lumbosacral corset. Total duration of antibiotics was 12 weeks which included 4 weeks of IV, followed by oral. One of them required surgical debridement. Both of them had complete resolution of symptoms by 3 months.

Discussion

Infection rate in endoscopic spine surgery can be curtailed by following universal aseptic precautions. Preoperative administration of antibiotics 24 hrs before surgery. And good postoperative follow up [12,13]. In our hospital all universal aseptic precautions were followed with thorough preoperative investigation and antibiotic administration 24 hrs before surgery followed by IV antibiotics first postoperative day and oral antibiotics for 3 days. Patients are followed up for 12/15 days postoperative. Discitis causes significant postoperative morbidity to the patient therefore high index of suspicion is warranted in all postoperative patients presenting with back pain postoperatively. As per review of literature incidence of discitis is around 0.21%-3.6%[1]. In our study it was around 1.72% which is in accordance with past studies. Most of the surgeons are of the view that discitis usually results from direct inoculation of the offending pathogen directly into disc space, hematoma or necrotic tissue may contribute to infection[10,11,]. In addition to this contaminated devices like microscope and other instruments also contribute to infection. The period between surgeries and onset of symptoms was typically 14-20 days similar to our study. The presenting complaint in our study was severe back pain not responding to routine analgesics. Diagnosis is made with close watch on history, physical examination, investigations including raised inflammatory markers and imaging studies like MRI. Staph aureus has been the predominant organism in various studies in the literature[17,18]. It is also the predominant organism in our study as well. Prophylactic use of IV antibiotics like vancomycin, ceftriaxone and amikacin had been the main stay of treatment. Duration of antibiotic therapy has been different in different studies[18,19]. In our study the protocol was to give antibiotics for total of 12 weeks. Which included 4 weeks IV and rest oral. Complete bed rest was advised and advocated for all the patients. There was complete remission of symptoms by 12 weeks.

Conclusion

Discitis is although an uncommon postoperative complication of endoscopic spine surgery. But still it remains a nightmare for both the operating surgeon and the patient. However appropriate and judicious use of preoperative broad spectrum IV antibiotics, taking universal aseptic precautions preoperatively, keeping high index of suspicion. And any patient who presents with back pain after an initial pain free period postoperatively should be thoroughly examined, investigated and started on prophylactic IV antibiotics immediately. Postoperative discitis whenever suspected or encountered should be treated aggressively for favourable outcome.

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