http://jmscr.igmpublication.org/home/
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v9i6.17

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Comparison of Taylor Approach vs Lumbar Approach of Spinal Anaesthesia in Terms of Difficulty to Perform in Patients Undergoing Transuretheral Resection of Prostate

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Abstract
Taylor modified paramedian approach (Taylors approach) which is reliable and less traumatic alternative in difficult spine . The purpose of the present study was to compare taylor approach vs lumbar approach of spinal anaesthesia in terms of difficulty to perform in patients undergoing transuretheral resection of prostate. 30 patients (Group C) received SPA by a L4/5 approach and 30 patients by Taylor's approach (Group T). Bupivacaine dose did not differ between groups. we observed total number of attempts in each group. The mean number of attempts per successful block in Group C and Group T was 1.13 ± 0.3 and 1.5 ± 0.6 respectively. The p value was 0.003 which was found to be statistically significant. (p value less than 0.005). So, taylors approach of spinal anesthesia is difficult to perform as compared to conventional approach and require expertise.

Introduction

Subarachnoid anesthesia provides excellent surgical operating conditions for transuretheral resection of prostate[1]. TURP can be performed under spinal anaesthesia or general anaesthesia, however the choice of anaesthetic technique for TURP is spinal anaesthesia as it offers many advantages over general anaesthesia including stable haemodynamic variables, decrease blood loss and post operative pain, less chances of deep venous thrombosis after surgery , decrease post-operative confusion and faster recovery[2,3]. Subarachnoid anesthetic techniques have proved to be extremely safe and require a small volume of drug, virtually devoid of systemic pharmacologic effects, to produce profound, reproducible sensory analgesia, and motor blockade[4]. Midline approach of spinal anaesthesia is the most commonly used technique but it has got limitations in patients who cannot flex adequately because of pain and ossified ligaments in old age. In these patients paramedian approach is very useful[5]. In 1940 Taylor described modified paramedian approach (Taylor or lumbosacral approach) via L_5-S_1 space which is reliable, less traumatic in difficult spine and causes less hemodynamic side effect[6]. Kumkum Gupta et al[4] in 2011 studied subarachnoid block with Taylors approach for

surgery of lower half of the body and lower limb. Subarachnoid anaesthesia provided excellent operating condition with fewer side effect but patient with spinal deformity had technical difficulty to achieve successful block. Taylors approach provide reliable and less traumatic alternative to conventional spinal anaesthesia in patient with deformed spine but taylors approach itself is difficult approach to perform and require prior expertise. So, the aim of study was to compare the taylors approach vs lumbar approach of spinal anaesthesia in terms of difficulty to perform in patient undergoing TURP.

Aims and Objectives

To compare the number of attempts in patients undergoing spinal anaesthesia at the level of L_3-L_4 interspace compared to Taylors lumbosacral approach at L_5-S_1 for TURP.

Material and Methods

After approval by the research and ethical committee and written informed consent of the patient, the study was carried out in ASA I and ASA II patients, aged between 30 -70 years, posted for TURP at IGMC, Shimla. The study was conducted in controlled prospective randomized manner from July 2018 to July 2019. The patients were assigned to their respective groups using random allocation software. ASA I and ASA II ,diagnosed case of BPH , male patient aged between 30-70 years Scheduled for TURP were included in study . Patients refusal to participate in the study, ASA class III and above, hypersensitivity to local anaesthetic, contraindication to spinal anaesthesia and patients on anticoagulant and antiplatelet drugs were excluded from study. Patients were divided into two groups Group C & Group T using random allocation software with 30 patients in each group receive conventional approach and Taylors lumbosacral approach of spinal anaesthesia with 3 ml of bupivacaine 0.5% hyperbaric solution respectively. All patients were preoperatively evaluated clinically, with routine investigations. Informed written consent to be taken from all patient included in the study. The patients were kept fasting for 8-10 hrs overnight and premedicated with tablet alprazolam 0.50 mg per orally night before surgery and 3 hour prior to surgery with sip of water. Patient was shifted to operation theatre, Intravenous access was secured and IV fluid started . Patients was monitored for heart rate (H.R), lead II electrocardiography (ECG), pulse oximetry (Spo2) and non invasive blood pressure (NIBP) every 5 min during surgery .The patient was positioned in sitting position. After cleaning and draping, the allocated interspace was identified by palpation. Then 2ml of 2% plain lignocaine was infiltrated on the skin. The lumbar puncture was performed with 26 gauze spinal needle in the sitting position using midline approach at L_3- L_4 interspace for C group and L_5- S_1 interspace by using Taylors approach for T group. After identification of needle placement by free flow of cerebrospinal fluid, the subarachnoid block was established by administrating 3 ml of 0.5% bupivacaine hyperbaric solution and patient was turned to the supine position and left in supine position for 10 minute. Number of attempt taken as Skin puncture with 26 gauge spinal needle taken as first attempt. Redirection of needle without skin puncture was not considered an additional attempt. New skin puncture was considered as another attempt.

Results

Demographic distribution in two groups were similar with no significant difference as shown in table 1. Mean age (in years) in group C was 66.63+8.620 and in group T was 64.40+ 7.064.

Table 1: Demographic Data (Age Distribution)

Sr .No	Group of Patients	Age		
		Mean	S.D	p-value
1	C	66.63	8.620	0.27
2	T	64.40	7.064	

Number of Attempts

The mean number of attempts per successful block in Group C and Group T was 1.13 ± 0.3 and 1.5 ± 0.6 respectively. The p value was 0.003 which was found to be statistically significant. (p value less than 0.005) as shown in table 2 and figure 1.

Table 2: Comparison of number of attempts

Number of attempts	No of cases		Mean ± S.D		p- value
	C	T	C	T	
1	26	16	1.13±0.3	1.5±0.6	0.003
2	4	11			
3	0	3			

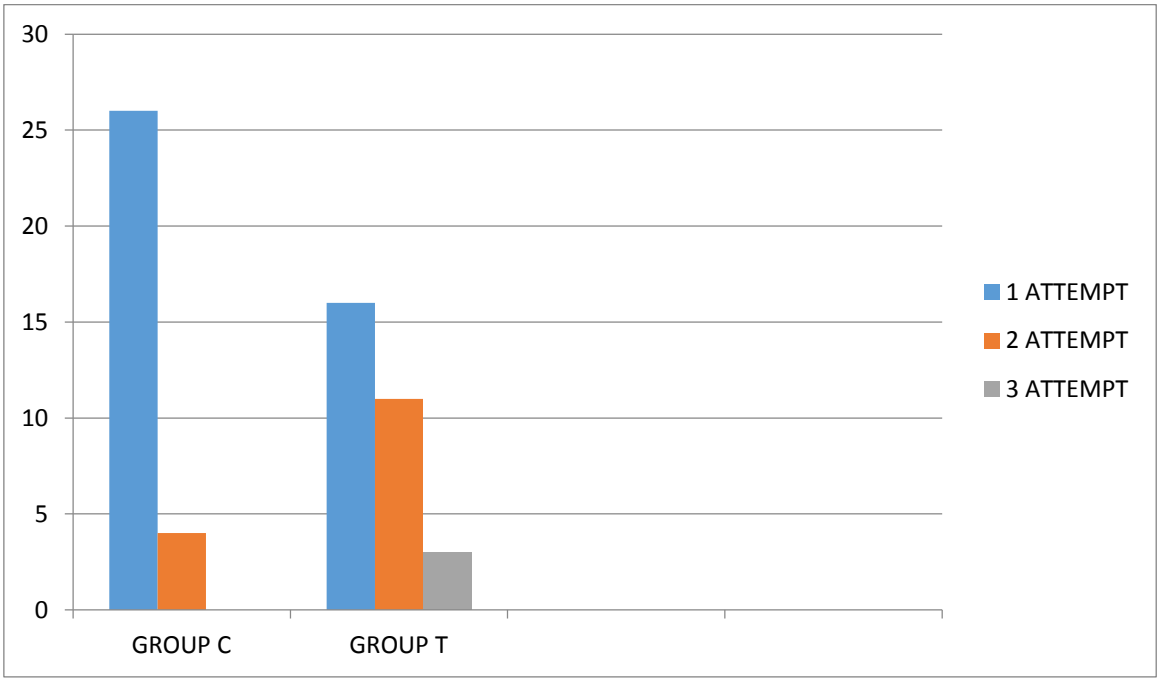

Fig 2: Comparison of number of attempts

Discussion

Spinal anaesthesia is safe, reliable and inexpensive modality for transurethral resection of prostrate with the additional advantage of providing stable hemodynamics, decreased blood loss, prolonged post operative pain relief, less chances of deep vein thrombosis after surgery, decreased postoperative confusion and faster recovery. As Most of patients are elderly with multiple co- morbidities, increased hemodynamic alterations are expected in patients undergoing transuretheral resection of prostrate under subarachnoid block[3.] Dr. P. Chalapathy et al[5] conducted study in 2016, Taylor approach is the best approach to overcome difficulty in lumbar puncture in difficult spinal cases found that mean number of attempts per successful block was 1.5 ± 0.51 with success rate of 94 %. The total number of attempt per successful block was more in group T as compared to group C. So, taylors approach is difficult to perform as compared to conventional

approach of spinal anaesthesia in patient undergoing transuretheral resection of prostate.

Conclusion

Taylor's approach of spinal anaesthesia was associated with more number of attempt per successful block as compared to lumbar approach of spinal anaesthesia. so, taylors approach is difficult to perform as compared to lumbar approach of spinal anaesthesia in patient undergoing transuretheral resection of prostate.

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