

# Role of Obturator Nerve Block in TURBT

Dr Prashant Lavania, Dr Bhupesh Gogia, Dr Shashank Sharma, Dr Sushmita Gupta

**Abstract:** *Introduction:* Obturator Nerve Block in TURBT is to prevent adductor reflex to avoid complications like bladder perforation or bleeding. Obturator nerve block can be achieved through anatomical landmark (blind) or by use of nerve stimulator or USG guided. Our study is a type of randomized control study. *Material & Method:* Study was conducted using Obturator nerve block with anatomical landmark (blind method) from feb 2017 to September 2018 in the department of general surgery of SN Medical College, Agra. All patients with proven bladder tumor were included in the study after taking prior informed consent. *Results:* Total numbers of patients included were 34 among which 28 were male and 6 were female patients. Average age of patients included in the studied was 65.4 years (40-75 years). Patients were divided randomly into two groups: Group A – given spinal anesthesia with obturator nerve block. Group B – given spinal anesthesia alone. Cases discarded at the end of study were 1 from group A and 3 from group B because of loss of follow-up. *Conclusion:* Obturator nerve block with spinal anesthesia is a better option for TURBT than using Spinal anesthesia alone.

**Keywords:** Obturator Nerve block, TURBT

## 1. Introduction

Obturator nerve originate from L2,L3,L4 lumbar plexus, passes through obturator foramen and supplies adductors of thigh, passes close to inferolateral bladder wall<sup>1</sup>. Stimulation of this nerve cause sudden jerk (adductor reflex) because of contraction of adductor muscles. This reflex may result in bladder perforation or deep cut leading to hemorrhage while doing trans urethral bladder procedures<sup>2,3</sup>. Spinal anesthesia causes only motor blockage of obturator nerve. General anesthesia can block both sensory and motor components but it is associated with its own side effects, hence avoided in old age<sup>4,5</sup>.

Prentiss was the first person who used regional blockage of obturator nerve in 1965<sup>6</sup>.

Obturator nerve block can be done blindly using anatomical landmark or under Ultrasound guidance<sup>7,8</sup>.

## 2. Materials and Method

Prospective study performed from February 2017 to September 2018 in the department of General Surgery in SN Medical College, Agra. All patients with informed consent irrespective of age and sex were included in the study and were randomly divided into two groups.

Group A comprises of the patients who were given obturator nerve block in addition to the spinal anesthesia

Group B include of the patients given spinal anesthesia alone.

### Inclusion Criteria

All patients having bladder mass on lateral or inferolateral walls were included in the study group.

### Exclusion Criteria

- Preexisting obturator nerve injury
- Abnormal coagulation profile
- Infection at injury site
- Allergy to local anesthesia

- Patients not giving the consent.

After taking informed consent, spinal anesthesia given. Group A patients were subjected to blind obturator nerve block depending upon location of the tumor. Patients in supine position with thighs externally rotated and abducted for giving blind obturator nerve block, a 22G needle inserted vertically at point 1.5 cm lateral and inferior to pubic tubercle and if touched to inferior rami of pelvis then after slightly withdrawing it was advanced laterally and superoposteriorly. Negative suction applied to ensure that no blood comes out and then 10ml of 1% lidocaine was injected. Outcome was measured by presence or absence of jerk during the procedure. Data was analysed using Chi Square test.

## 3. Results

Total number of patients included were 34 among which, 28 were male and 6 were female patients. Average age of patients included in the studied was 65.4 years (40-75 years). Patients were divided randomly into two groups:

Group A – given spinal anesthesia with obturator nerve block  
Group B – given spinal anesthesia alone

Cases discarded at the end of study were 1 from group A and 3 from group B because of loss of follow up. Fortunately complications like bladder perforation or mortality were not noted in our study. Size of the bladder mass ranges from 1cm to >5cm.

As per ultrasonography report 11 patients were having single mass while 19 patients were having 2 or more masses in their bladder.

	Number of bladder mass		Total
	1	>1	
Number of patients	11	19	30

Average duration of surgery in most of the surgeries was less than 40 min. No bladder spasms were noted in patients given nerve block (group A) while all patients of group B

experienced spasms. So the success rate of obturator nerve block in our study was hundred percent in preventing adductor spasms and hence its resulting complications.

	Group A	Group B
Spasm (>10)	0	9
Blood Transfusion	2	4

Effectiveness of obturator nerve block does not depend on the number of bladder mass as the p value is 0.224 which is not significant.

	Number of Bladder Masses		Total
	1	>1	
ONB Effective	4	11	15
ONB Not Effective	1	4	5
Total	5	15	

P= 0.224 (Not Significant)  $X^2 = 2.993$

But its effectiveness depends upon the duration of surgery as the p value is 0.0085 which is significant.

	Duration Of Surgery		
	< 40 minutes	40- 60 minutes	> 60 minutes
ONB Effective	13	4	0
ONB Not Effective	0	2	1
Total	13	6	1

P = 0.0085 (Significant)  $X^2 = 9.542$

Post operative complications are as mentioned below

Complication	Group A	Group B
Spasm (>10)	0	9
Blood Transfusion	2	4
Bladder Perforation	0	0
Mortality	0	0

Blood transfusion depends upon the size and number of bladder masses.

#### 4. Discussion

Incidence of bladder carcinoma is increasing in developed countries. Most are well differentiated transitional cell carcinoma. Obturator nerve reflex can occur in spinal anesthesia so obturator nerve has also to be blocked. Various procedures to block obturator nerve are in practical use<sup>7,8,9,10</sup>. In our study we have done blind obturator nerve block with spinal anesthesia with acceptable outcome and fortunately with no grave complication.

In our study success rate of blind obturator nerve block was 100 % (20/20). Augspurger et al reported a success rate of 83.8-85.7 %<sup>11</sup> which is comparable to our study. Obturator nerve block under ultrasound guidance has a success rate of 93-97%<sup>12,13</sup>, which is slightly better than blind obturator nerve block in other studies.

As bladder tumor is more common in old age so spinal anesthesia is a preferred method. Dick et al<sup>14</sup> has reported

5% incidence of intraperitoneal bladder perforation. Although in our study there is no incidence of perforation. Dick et al<sup>14</sup> has reported 13% incidence of hemorrhage. As far as bladder perforation is concerned no perforation occurred in our patients which is better as compared to that reported in the literature<sup>15,16</sup>. Size of tumor and its presence as uni or bilateral is also comparable to other studies reported in literature.<sup>12,13,14,15,16</sup>

#### 5. Conclusion

TURBT is a routinely performed procedure in bladder tumors. Obturator nerve block along with spinal anesthesia can be safely employed to prevent obturator jerk which occur in posterolateral areas of bladder. We recommend obturator nerve block in every patient of bladder tumor undergoing TURBT.

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