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Research Article

**EFFICACY OF OBLIQUE SUBCOSTAL TRANSVERSE  
ABDOMINAL BLOCK IN LAPAROSCOPIC  
CHOLECYSTECTOMY**<sup>1</sup>Fayyaz Ahmad, <sup>1</sup>Asad Tahir, <sup>2</sup>Ferhat Jabeen<sup>1</sup>Sheikh Zayed Hospital Rahim Yar Khan<sup>2</sup>Mayo Hospital Lahore**Abstract;**

**Objective;** To determine the efficacy of oblique subcostal transverse abdominal block in laparoscopic cholecystectomy.

**Patients and methods;** This was a descriptive case series study, which was conducted at Services hospital, Lahore during 01-07-2017 to 31-1-2018. In this study the cases of age 20 years or more of both genders undergoing laparoscopic cholecystectomy were included. The cases with end stage liver or renal failure were excluded. The oblique subcostal transverse abdominal block was applied after completion of laparoscopic cholecystectomy, under the guidance of linear 5–12 MHz ultrasound transducer under aseptic measures. The block was made up of 50:50 mixture of bupivacaine 5 mg/ml and lignocaine 21 mg/ml and adrenaline 1:200,000. The efficacy was labelled as yes where the pain was < 3 on visual analogue scale assessed at 12 hours of surgery.

**Results;** In this study there were total 40 cases undergoing laparoscopic cholecystectomy. Out of these, there were 28 (70%) were females and 12 (30%) were males. The mean age was 49.34±6.39 years. The efficacy of oblique subcostal transverse abdominal block was seen in 26 (65%) of the cases. There was no significant difference in terms of gender between two groups with  $p=0.95$ . The efficacy was near significantly better in cases with age less than 50 years where it was seen in 21 (70%) of cases with  $p=0.13$ . There was also no significant difference in terms of duration of surgery with efficacy with  $p=0.89$ .

**Conclusion;** Oblique subcostal transverse abdominal block has shown efficacy in around 2/3<sup>rd</sup> of cases and it is near significantly better in cases with age less than 50 years.

**Key words;** Subcostal, Cholecystectomy

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**INTRODUCTION:**

Acute Cholecystitis is one of the commonest presentations to the surgical departments and early or delayed surgical intervention is the treatment of choices. Laparoscopic cholecystectomy is a preferred technique and is considered as minimally invasive modality. The major side effect is the pain even its minimally invasive and first 24 hours are the most important in this context and warrant a valuable intervention. [1,2].

There are wide ranges of pain killer modalities and include oral, intravenous, epidural and nerve block analgesics varying in potency and mode of action. The most common used one is intra-venous patient controlled analgesia, intraperitoneal injection, thoracic epidural analgesia, and use of low-pressure pneumoperitoneum. Each of these modalities have their own benefits, duration of relief and side effect profiles [3,4].

Transversus abdominis plane block (TAP Block) is one of the most famous intervention of the recent times used in the post operative analgesia in abdominal surgeries. It was first employed by Rafi et al [5]. Hebbard et al described the achievement of this peripheral block by an ultrasound guided subcostal oblique approach [6]. Oblique subcostal Transversus abdominis plane block (OSTAP block) is efficient in surgeries such as gastrectomy, laparoscopic bariatric procedure, liver transplant, open hepato-biliary or renal surgery. Only a few studies have been published regarding the OSTAP block approach in laparoscopic cholecystectomy, being heterogeneous concerning the procedure or the postoperative analgesic regimen. These studies concluded the beneficial effects of the OSTAP block on 24 hours opioid consumption [7,8].

**OBJECTIVE:**

To determine the efficacy of oblique subcostal transverse abdominal block in laparoscopic cholecystectomy.

**MATERIAL AND METHODS****STUDY DESIGN**

Descriptive case series

**SETTING**

Services Hospital, Lahore

**DURATION OF STUDY**

01-07-2017 to 31-1-2018

**SAMPLING TECHNIQUE**

Non probability consecutive sampling

**MATERIAL AND METHODS:**

In this study the cases of age 20 years or more of both genders undergoing laparoscopic cholecystectomy were included. The cases with end stage liver or renal failure were excluded. The oblique subcostal transverse abdominal block was applied after completion of laparoscopic cholecystectomy, under the guidance of linear 5–12 MHz ultrasound transducer under aseptic measures. The block was made up of 50:50 mixture of bupivacaine 5 mg/ml and lignocaine 21 mg/ml and adrenaline 1:200,000. The efficacy was labelled as yes where the pain was < 3 on visual analogue scale assessed at 12 hours of surgery.

**Statistical analysis;**

The data was analysed by using SPSS version-23. Post stratification Chi square test was applied taking p value <0.05 as significant.

**RESULTS:**

In this study there were total 40 cases undergoing laparoscopic cholecystectomy. Out of these, there were 28 (70%) were females and 12 (30%) were males. The mean age was  $49.34 \pm 6.39$  years. The efficacy of oblique subcostal transverse abdominal block was seen in 26 (65%) of the cases. There was no significant difference in terms of gender between two groups with  $p = 0.95$  as in table I. The efficacy was near significantly better in cases with age less than 50 years where it was seen in 21 (70%) of cases with  $p = 0.13$  (table II). There was also no significant difference in terms of duration of surgery with efficacy with  $p = 0.89$  as in Table III.

Table No I. Efficacy vs gender

Gender	Efficacy		Total	p value
	Yes	No		
Male	8 (66.67%)	4 (33.33%)	12 (100%)	0.95
Female	18 (64.28%)	10 (35.72%)	28 (100%)	
<b>Total</b>	<b>26 (65%)</b>	<b>14 (35%)</b>	<b>40 (100%)</b>	

Table No II. Efficacy vs age groups

Age groups	Efficacy		Total	p value
	Yes	No		
<50	21 (70%)	09 (30%)	30 (100%)	0.13
>50	05 (50%)	05 (50%)	10 (100%)	
<b>Total</b>	<b>26 (65%)</b>	<b>14 (35%)</b>	<b>40 (100%)</b>	

Table No III. Efficacy vs Duration of surgery

Duration of surgery	Efficacy		Total	p value
	Yes	No		
<45 mints	18 (66.67%)	09 (33.33%)	27 (100%)	0.89
>45 mints	08 (61.53%)	05 (38.47%)	13 (100%)	
<b>Total</b>	<b>26 (65%)</b>	<b>14 (35%)</b>	<b>40 (100%)</b>	

**DISCUSSION:**

Pain control is the second important goal after the curative intervention in the surgical departments. Cholecystectomy is also a very painful surgery and adequate analgesia can lead to better outcome and early back to routine life. Various modalities have been tried and the local blocks are one of the most popular strategies these days.

In the present study the efficacy of oblique subcostal transverse abdominal block was seen in 26 (65%) of the cases at 12 hours of surgery. These results were similar to the studies done in the past. According to a study done by Mukharjee A et al, which used the same protocol and assessed pain control at different levels by using similar visual analogue scale and in htier study, the efficacy of oblique subcostal transverse abdominal block in laparoscopic cholecystectomy at 12 hours was observed in 63% of the cases.<sup>8</sup> This was also seen by the other studies as well where the efficacy was seen in 55 to 68% of the cases. This difference was because different studies used different study protocols in terms of pain scores and cut off values [9,10].

This was also supported by the study done by El-Dawlatly et al where they compared the efficacies of TAP block vs no block (no intervention) and

they revealed that the cases with block needed a lesser degree of opioid drug usage 8.6 µg vs 23 µg with a significant difference of  $p < 0.01$  [11].

The efficacy was near significantly better in cases with age less than 50 years where it was seen in 21 (70%) of cases with  $p = 0.13$ . This was also supported by the other studies where it was revealed that the cases with mean age less had better efficacies as compared to the ones with higher age; though they did not use the same cut off values.<sup>11-12</sup> This can be explained by the fact that the younger population had better tolerance to the pain as compared to the older ones.

**CONCLUSION:**

Oblique subcostal transverse abdominal block has shown efficacy in around 2/3<sup>rd</sup> of cases and it is near significantly better in cases with age less than 50 years.

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