MODIFIED SCANDINAVIAN TECHNIQUE – AN OPEN ACCESS TECHNIQUE FOR PRIMARY TROCAR IN LAPAROSCOPIC SURGERY

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ABSTRACT

BACKGROUND
This study derives the advantages of Modified Scandinavian technique over the other techniques in laparoscopy.

METHODOLOGY
This is a prospective study involving 50 patients presenting with acute or chronic abdominal conditions who underwent laproscopic surgeries with Modified Scandinavian technique at Government Rajaji Hospital,Madurai between September 2013-2015. Fifty cases with acute or chronic abdominal conditions like calculous cholecystitis, cholelithiasis, acute or subacute or chronic appendicitis, carcinoma rectum, etc without comorbidities were selected and studied in detail. A structured profoma was used to collect relevant information for each induvidual patient selected.

RESULTS
Out of 50 patients, none of them had intraoperative complications like bowel injury, vascular injury, preperitoneal insufflation or gas embolism. Only one patient had minor wound infection. 38 patients were followed up. No patient had any sequelae of incisional hernia or other complications.

CONCLUSION
According to this study, Modified Scandinavian open access technique is the safest technique for all patients particularly for thin individuals, suspected TB and patients with previous abdominal surgery. It is fast and easy to perform when compared with Hasson open technique.[1]

KEYWORDS
Modified Scandinavian technique, Laparoscopic surgery.

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INTRODUCTION: PROCEDURE: In this technique, a small 10 mm transverse skin incision is made supraumbilically, which will show the junction of the base of umbilicus with the linea alba. A tiny slit is made vertically at this junction using 11 size blade. A specially designed cannula with blunt and cone shape tipped trocar is inserted through the above said slit, which will dilate the small slit and enter into the peritoneal cavity safely with air tight. There is no need for fascial sutures.

Fig. 1: Supraumbilical incision for primary trocar

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Fig. 2: Incision being dilated to expose the junction

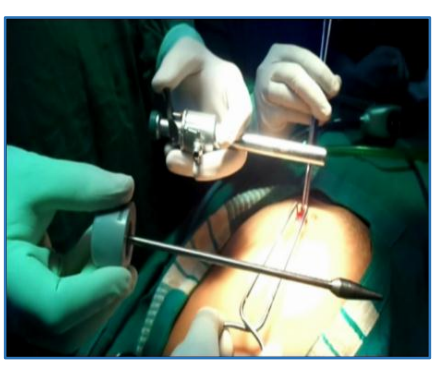

Fig. 3: Point of base of the umbilicus with the linea alba

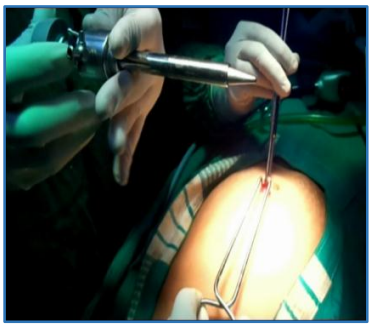

Fig. 4: Blunt conically tipped trocar with cannula

Fig. 5

Fig. 6

Advantages of Modified Scandinavian Open Technique over Hasson Open Technique:

- Small 10 mm incision in Modified Scandinavian Technique when compared with 25 mm incision in Hasson.
- Time taken is very less.
- Modified Scandinavian technique does not need fascial sutures to hold the instrument.
- CO_2 leak is very less.
- In supraumbilical entry, the umbilicus acts as a guard to prevent false tract and preperitoneal insufflations.
- Safe and easy to perform.[2,3]

RESULTS:

Age in years	No. of cases	Percentage
<20	10	20
21–30	14	28
31–40	6	12
41–50	12	24
51–60	8	16
Total	**50**	**100**
Table 1: Age distribution		

Maximum patients were between 21 and 30 years of age.

Diagnosis	No. of cases	Percentage
TB abdomen	6	12
Acute-on-chronic appendicitis	2	4
Acute appendicitis	4	8
Calculus cholecystitis	8	16
Carcinoma rectum	2	4
Cholelithiasis	6	12
Chronic appendicitis	2	4
Liver abscess	2	4
Pos LSCS sinus tract	2	4
Sub-acute appendicitis	14	28
Varicocoele Lt	2	4
Total	**50**	**100**
Table 2: Diagnosis		

44 percentage of the patients underwent surgery for appendicitis, next to that was gall bladder disease with 28 percentage.

Procedure	Time taken in minutes
Lap. Appendectomy	30
Lap. Cholecystectomy	44
Diagnostic Lap with omental biopsy	22
Lap excision of post LSCS sinus	45
Lap. Liver abscess drainage	28
Lap Varicocoelectomy	30
Lap APR	150
Table 3: Procedure	

Minimum time taken for the procedure is 22 minutes for diagnostic laparoscopy with omental biopsy in a suspected TB abdomen patient. The maximum time taken was 150 minutes for Laparoscopic APR for carcinoma rectum.

Out of 50 patients, 18 patients were thin built low BMI, 6 patients were with suspected TB abdomen and one patient with post LSCS sinus.

18 Patients were thin built, 6 Patients were with suspected TB abdomen and 3 patients were with previous abdominal surgery.

Relative Indication	No. of cases	Percentage
Thin built	9	36
TB abdomen	3	12
Post LSCS	3	12
Nil	10	40
Total	**25**	**100**
Table 4: Relative indication		

36% patients were thin built, 12% patients were with suspected TB abdomen, 12% patients were with previous abdominal surgery.

Time taken for primary Trocar	No. of cases
3 minutes	8
4 minutes	11
5 minutes	6

Table 5: Time taken for primary trocar

The minimum time taken for primary trocar was 3 minutes and maximum time taken was only 5 minutes.

SUMMARY: Totally 50 patients were studied. All 50 patients underwent laparoscopic surgery with Modified Scandinavian open access technique.

Out of them, females are 72% and males 28% and their ages were between 16 to 60 years.

Among them, maximum 28% of patients underwent surgery for sub-acute appendicitis, calculus cholecystectomy 16%, cholelithiasis 12%, acute appendicitis 8%, TB abdomen 12%, acute-on-chronic appendicitis 4%, patients with previous abdominal surgery 4% and varicose is 4%.

Maximum time taken for the primary trocar was only 5 minutes and minimum time was 3 minutes.

Maximum time taken for entire procedure was 150 minutes and minimum time taken was 22 minutes.

The relative indication of Modified Scandinavian technique – thin built is 36%, previous surgery 12% and TB abdomen 12%.

Out of 50 patients, none of them had intraoperative complications like bowel injury, vascular injury, preperitoneal insufflation or gas embolism. Only one patient had minor wound infection.[4]

38 patients were followed up. No patient had any sequelae of incisional hernia or other complications.

According to this study, Modified Scandinavian open access technique is the safest technique for all patients particularly for thin individuals, suspected TB and patients with previous abdominal surgery.

CONCLUSION: Around 50 patients underwent this prospective study. All underwent laparoscopic surgery with Modified Scandinavian open access technique.

Among them, 36% of patients were thin built with BMI <20, 12% of patients were with previous abdominal surgery, 12% of patients were with suspected TB abdomen and one patient with rectal carcinoma.

None of them had bowel or major vascular injury or preperitoneal insufflations.

In this technique, the skin incision was only 10 mm when compared with 25 mm incision in Hasson technique. Proper anatomical repair was done for small primary trocar port. So incidence of the incisional hernia will be less.

The maximum time taken for the primary trocar in Scandinavian technique was only 5 minutes and minimum was 3 minutes.

The average time taken for the primary trocar in Scandinavian technique was only 4 min.

Hence, Modified Scandinavian open access technique is the safe, quick to perform and best technique than any other access technique for all the patients.

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