

Pneumoperitoneum with Open Technique: Our Experience at a Tertiary Center Hospital - An Evidence Based Report

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ABSTRACT

Aim: To study the outcome of open technique for access in laparoscopic surgery.

Methods: In a period of 2 years from Jan 2012 to Dec 2013 a total of 50 procedures; all laparoscopic cholecystectomies were included in the study. All procedures were monitored for the technique used to gain access to the peritoneal cavity, time taken to attain complete pneumoperitoneum (Pressure=15mmHg) and development of any complications.

Results: A successful pneumoperitoneum was achieved in all patients. The mean time taken to achieve full pneumoperitoneum was on average 4.5min.

No visceral or vascular injury occurred. Only 8 minor complications were noted.

Conclusion It can be concluded that laparoscopic access using open technique is safe and feasible in our setup.

Keywords: Pneumoperitoneum, open technique, laparoscopic surgery

INTRODUCTION

Over the last 25 years there has been a rapid advancement in laparoscopic surgery. Laparoscopy has become a gold standard for a lot of procedures. However laparoscopy comes with its own share of complications. A review of literature shows that the major share of complications with laparoscopic surgery is associated with the initial access into the peritoneum^{1,2}. A variety of methods for entry into the peritoneum exist. Every technique has its own merits and demerits. The Hungarian physician János Veres first described the use of his Veres needle to induce pneumothorax in the treatment of pulmonary tuberculosis in 1936³. Hasson introduced his famous open technique in 1971⁴. Direct trocar insertion (DTI) was first reported by Dingfelder in 1978⁵.

Laparoscopic entry using a Veres needle followed by the blind insertion of a sharp trocar remains the most common entry method used by surgeons but comes with the highest share of complications. DTI is the fastest but the least used entry technique and it is mainly used by gynecologists. Open technique described by Hasson is considered to be safest technique. This technique is slow and considered cumbersome by some surgeons. The available literature is not clear as to which form of laparoscopic entry is superior in terms of complication risks, and the most common recommendation is for surgeons to use entry methods with which they feel comfortable^{6,7,8,9}.

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We would like to share our experience of laparoscopic access at Khawaja Safdar Medical College, Allama Iqbal Hospital. We prefer to use the open technique over the veress technique. We believe it to be a safe technique although it does increase the time required to gain access to the peritoneal cavity.

MATERIAL AND METHODS

In a period of 2 years from Jan 2012 to Dec 2013 a total of 50 procedures; all laparoscopic cholecystectomies have been carried out at our unit. All patients were females. None of the patients had any previous surgeries. All procedures were monitored for the technique used to gain access to the peritoneal cavity, time taken to attain complete pneumoperitoneum (Pressure=15mmHg) and development of any complications.

RESULTS

The open Hasson technique was used in all our patients to attain pneumoperitoneum. A successful pneumoperitoneum was achieved in all patients. The mean time taken to achieve full pneumoperitoneum (defined as the time taken from incision to the insertion of the laparoscope at pressures of 15mmHg) was on average 4.5min (min 2.0 min to 11.0 min).

No visceral or vascular injury occurred. Only 8 minor complications were noted. Six patients had a persistent air leak from the port wound which were managed by closure of the wound with silk suture.

Two patients had excessive bleeding from the wound which was managed by removal of the port and electrocautry of an active bleeder. The port was reinserted. No other complications occurred.

DISCUSSION

Our results are comparable to international literature as the open technique is associated with minimal major complications (vascular and bowel) <3%. We had 0 major complications^{10,11}. Average access time for open technique has been reported as 5min^{10,11}. Our time was a bit higher but we tend to improve on that with experience. We had minor complications in only 8% of the patients which is comparable to international data^{10,11}.

CONCLUSION

We would like to conclude with our limited experience that the open technique for creating pneumoperitoneum is safe as compared to all other techniques.

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