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An Easy and Safe way to Open Direct Trocar Access Method in Laparoscopy: The Patrick's Window.

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Abstract

Background

Access to achieve capno-peritoneum during laparoscopy could be Closed (Veress) or Open (Hanson's or Direct trocar) method. The beginner is face with challenges of avoiding bowel or visceral injury during entry. An experience laparoscopy surgeon also tries to use a safe and faster approach which sometimes may be challenging.

Aim

To propose and elucidate an easy and safe guide in direct trocar access method during laparoscopy. The Patrick's Window.

Method

The supra- or infra-umbilical crease was incised and carried down to a thin layer of tissue deficient of subcutaneous tissue at the cicatrix of the umbilicus. This created a well circumscribed window (The Patrick's window). A curved number one or three artery forceps was passed cephalad and opened with jaw facing downwards. The 10mm trocar was then passed in between opened jaw of the forceps, with mild abdominal wall traction. The video telescope was used to confirm successful access by visualizing visceral or bowel structures.

Results

In 65 laparoscopy surgery performed with this method, No bowel or visceral injury was seen or observed during entry or primary port placement. The average access time was 2 minutes 15 seconds.

Conclusion

The Patrick's window is very easy, safe and fast access guide to direct trocar access method during laparoscopy. This will be a very good way for a beginner in laparoscopy surgery.

Keywords: *Direct trocar access method, laparoscopy, Patrick's window.*

Introduction.

Routine methods to achieve capno-peritoneum during laparoscopy could be Closed (Veress) or Open (Hanson's or Direct trocar) technique [1,2]. The trainee is face with challenges of avoiding bowel or visceral injury during initial primary port placement. An experience laparoscopy surgeon also attempts to use a safe and faster approach which sometimes may be challenging. It is therefore necessary to propose and elucidate an easy and safe guide in direct trocar access method during laparoscopy. The Patrick's Window. This report is prepared using the STROSS guideline.

This work has been reported in line with the SCARE criteria [3]. This research work has been reported in line with the PROCESS criteria.[4]

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Method.

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The preferred anatomical site of entry is Supra, Trans or Infra-umbilical route. The supra- or infra-umbilical crease was incised and taken down to a thin layer of tissue deficient of subcutaneous tissue at the cicatrix of the umbilicus. This incision, created a well circumscribed window (The Patrick's window) as is being cut down to open the peritoneal cavity. A curved number one or three artery forceps was passed cephalad and opened with jaw facing downwards. The trocar was then passed in between opened jaw of the forceps, with mild abdominal wall traction. The video telescope was used to confirm successful access by visualizing visceral or bowel structures through the trocar as was shown on a monitor. A prior palpation of the umbilical cicatrix before incision or in the surgical outpatient revealed indentation termed Patrick's indentation or Sign" (figure 1 and 2.). This indentation once present predicted faster entry while using Patrick's Window (figure 3 and 4). Figure 5 showed telescope inserted after the port placement.

Results.

The laparoscopic procedures performed with this method were 65 cases. In 65 laparoscopy surgery performed with this method, no bowel or visceral injury was seen or observed during entry or primary port placement. The average access time was 2 minutes 15 seconds, It was discovered that it made other secondary port placement easy and also shortened the operation time. These procedures were performed in two different centres (a tertiary cenre and a private centre) from February 2021 to September 2022. Peri-canular gas leakage was prevented using a towel clip or Kochers forceps, Figures 1 to 6 showed the creation of Patrick's Window and the insertion process for the optical port.

Fig.1 Patrick's indentation sign

Fig.2 Prepared and draped operation field.

Fig.3 Patrick's Window

Fig.4 Patrick's Window

Figure 5 Introduction of port (trocar and cannula) in wide open jaw of artery forceps.

Fig 6. Inserted primary or optical port through the window with towel clips to prevent leakage of $C0_2$.

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DISCUSSION.

The two most common application of peritoneal entry during laparoscopic surgery is by close method (Veress needle) or by open using the Hasson Cannula [1]. Optical method of entry has also been reported. These methods are applied with the aim to reduce or forestall gas leak and minimize entry injury to both bowel and vessels.

A recent Cochrane review by Watson et al.[6] compared the laparoscopic entry techniques in adults. They concluded that the overall evidence was insufficient to support the use of one laparoscopic entry technique over another.

The placement of primary port safely is the first encouraging step in laparoscopy. The primary port which is the optical port aids in the placement of secondary ports. Most injuries encountered in port placement occur at the time of primary port placement. This injury is preventable if certain skills or experience is used, the beginners in laparoscopy found the step of primary port placement challenging. Close method of entry by way of Veress needle has recorded certain degree of injury [7,8]. The use of open method try to mitigate injury during primary port entry. The use of Patrick's window helped in our cases to completely mitigate injury during entry. This is because the window is seen clearly and passed through or in between the opened curved artery forceps. All cases of laparoscopy performed using this method of entry, no injury was encountered during entry of primary port. More so, it encouraged fast entry with smooth insufflation of carbon dioxide. The use of towel clip positioned at the sides of the port in some cases helped to further forestall gas leakage during the procedure.

Sometimes delay occur in trying to establish peritoneal access by open method. The author Patrick Okechukwu Igwe described an initial preoperative index finger palpation of the umbilical cicatrix. Feeling an indentation or opening of the rings of umbilical ring tissue signifies "Patrick's indentation or Patrick's sign" positive. This shows or predicts easy dictation of Patrick's window and translate to faster entry during primary port placement. Most of my trainee residents found this method rewarding and more confident during laparoscopic primary port entry. In author's earlier report as a young trainee, it was quite beneficial[9]. This may also be of immense benefit in literature as to add to already established method by Hasson. However with this Patrick's Window, Hasson's cannula was not used because the port (trocar and cannula) can be passed through the window safely. No doubt why this method received applause at the presentation of the Nigerian Surgical Research Society presentation in 2021. Residents in various specialty requested for the details of this method. In addition this method has been used in training of most beginners and resident in surgery in my department. Even after learning other methods, they (residents) reverted to this method of entry. The author also found it rewarding especially during laparoscopic cholecystectomies because it also hastened gall bladder specimen retrieval which was easily done through umbilical port, as he (author) did presented at both the west African College of Surgeons (WACS) scientific meeting and international College of Surgeons (ICS) conference, Nigerian National Section Abuja 2022 "Umbilical port gallbladder specimen retrieval after laparoscopic cholecystectomy". Similar experience was reported in the literature [10]. Furthermore it shortened the entry time during laparoscopic fundoplication surgeries and total laparoscopic distal gastrectomy, because it encouraged easy placement of 12 mm port as the primary or optical port. It will help to avoid comp[lications during primary port placement.[11-113].

It will be pertinent to state that this method although very good in previously scarred umbilical port in our study, the palmers point still remained the preferred option until further research proves otherwise.

Currently studies are being conducted in my center to compare this method with other available conventional methods in gaining access or primary port placement during laparoscopic surgery. Other centers are also enjoined in this research as it may have advantage during laparoscopic surgery.

Conclusion.

The Patrick's window is very easy, safe and fast access guide to direct trocar access method during laparoscopy. This will be a very good way for a beginner in laparoscopy surgery.

Presentations.

Nigerian Surgical Research Society (NSRS) Scientific Conference National Section Port Harcourt 2021. As '' **An Easy and Safe way to Open Direct Trocar Access Method in Laparoscopy: The Patrick's Window** ''.

Consent

Written informed consents were obtained from the patients for publication of these Cases and any accompanying images. A copy of the written consent is available for review by the Editor of this journal.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contribution

"Author read and approved the final manuscript". POI - conception and design and have given final approval of the version to be published and agree to be responsible for all aspects of the work in making that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Acquisition of data, or analysis and interpretation of data and drafting the manuscript.

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