

TECHNICAL NOTE

Are the automatic retractors indispensable for optimal exposure in upper gastrointestinal surgeries?

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ABSTRACT

Optimal incision and exposure is one of the crucial steps for successful abdominal surgery. Thus, how to open and expose the surgical field is a very important issue particularly in upper abdominal operations. Various types of incisions were proposed in order to obtain optimal exposure in upper abdominal procedures but most of them depends on automatic retractors. In this article, we present a simple and useful technique, which we obtained by combining bilateral subcostal incision with simple traction sutures without using an automatic retractor, and which we believe provides satisfactory exposure.

Keywords: surgery, exposure, incision, retractor

ÖZET

Üst gastrointestinal sistem cerrahilerinde ideal görüş sağlamak için otomatik reaktörler zorunlu mudur?

İdeal cerrahi kesi ve cerrahi alan görüşü, başarılı bir abdominal cerrahinin en önemli aşamalarındandır. Bu nedenle cerrahi alanın nasıl açıldığı ve ameliyat sahasının nasıl ortaya konulduğu, özellikle üst abdomen bölgesi ameliyatlarında çok önemli bir husustur. Üst gastrointestinal sistem cerrahi işlemlerinde, ideal görüşü elde edebilmek için çeşitli cerrahi kesi tipleri ileri sürülmüştür ancak bunların büyük bir kısmı otomatik reaktörlere bağlıdır. Biz bu yazıda, bilateral subkostal insizyonu otomatik reaktör kullanmadan basit traksiyon sütürleri ile kombine ederek elde ettiğimiz ve tatminkâr cerrahi görüş sağladığımızı düşündüğümüz basit ve kullanışlı tekniği sunuyoruz.

Anahtar kelimeler: cerrahi, görüş, kesi, reaktör

INTRODUCTION

Bilateral subcostal incision (Chevron, arrowhead, bucket handle) provides excellent exposure of the upper abdomen. This incision is used for numerous upper abdominal surgeries such as hepatic, pancreatic, gastric, esophageal, renal and adrenal resections including liver transplantation [1-3]. Various types of incisions were proposed in order to obtain optimal exposure in upper abdominal surgery especially in liver surgery [4-6]. Each of these incisions have both advantageous and unfavorable aspects. Surgeons generally require automatic retractor devices in order to obtain optimal exposure with these incisions and this is the major limiting factor. Here we define a simple technique which consists of bilateral subcostal incision and 2 additional traction sutures in order to provide excellent exposure for all kinds of upper abdominal procedures.

TECHNIQUE

We first perform bilateral subcostal incision then we open the abdominal cavity through the incision. Then we identify, divide, and ligate the falciform ligament. We place 2 simple hanger retractors both right and left sides of the subcostal borders, we retract the lowermost costae in order to obtain optimal exposure. Then we attach them to the metal sticks that are bilaterally fixed to the operation table directly or using connection tools such as roller gauze (Figure 1). This equipment is easy to find and also, they are not a part of any automatic retractor sets. Then we handle caudal border

of the incision. We fold over enblock (skin-muscle-fascia) distal flap and we pull it downwards as possible as we can. Then we prepare 0 point sharp silk suture materials and put 2 sutures in order to provide adequate traction, and also fix the enblock flap to skin. We put these traction sutures to both right and left sides of the distal flap and each suture passes between fascial layer of the distal flap and skin (Figure 2 and 3). Finally, we obtain excellent exposure for upper abdominal surgeries particularly hepatopancreatobiliary procedures.

DISCUSSION

Optimal exposure is the crucial step of the successful abdominal surgery. Thus, how to open and expose the surgical field is a very important issue and it substantially depends on type of the incision. According to Zinner et al, a good incision should have three essential properties: accessibility, extensibility and security

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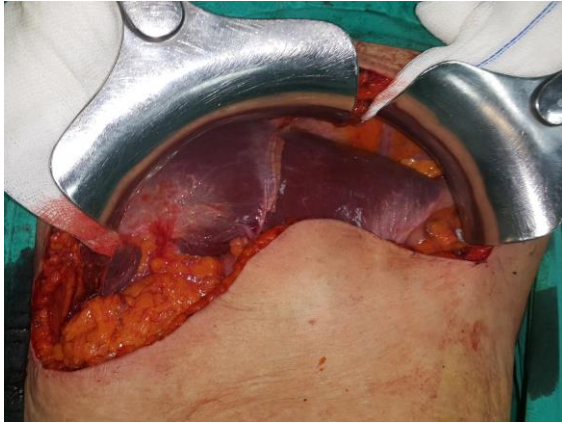


Figure 1. Two simple hanger retractors both right and left side of the subcostal borders are placed and retracted after bilateral subcostal incision. Then they are attached to the metal sticks that are bilaterally fixed to operation table.

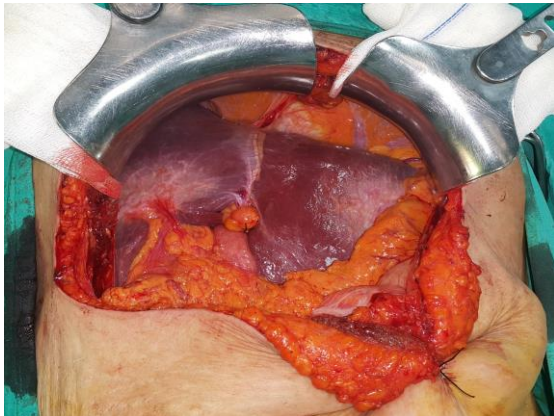


Figure 2. Traction sutures are put in order to generate adequate traction, and also fix the enblock flap to skin.

[4]. Many different abdominal incision types were proposed in terms of planned surgical procedures [2,4]. Inherently various types of incisions were defined to gain optimal surgical exposure for upper abdominal procedures such as, bilateral subcostal inci-

REFERENCES

1. Zinner MJ, Ashley SW, editors. Maingot's Abdominal operations. New York, The McGraw-Hill Companies, 2007.
2. Ajao OG. Abdominal incisions in general surgery: A review. *Ann Ib Postgrad Med* 2007;5(2):59-63.
3. Hevia V, Ciancio G, Gomez V, Alvarez S, Diez-Nicolas V, Burgos FJ. Surgical technique for the treatment of renal cell carcinoma with inferior vena cava tumor thrombus: Tips, tricks and oncological Results *Springer Plus* 2016; 5:132.

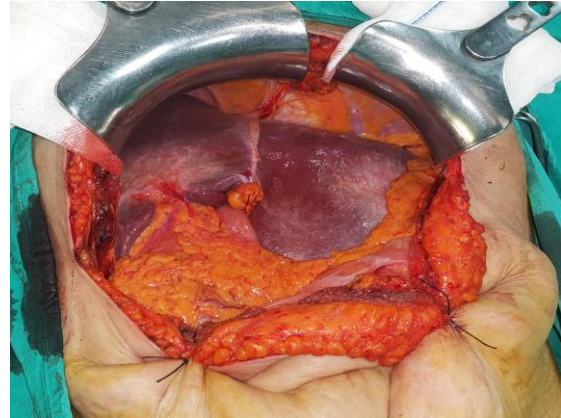


Figure 3. Traction sutures are placed to both right and left sides of the distal flap and each suture passes between fascial layer of the distal flap and skin.

sion (Chevron, arrowhead, bucket handle), J incision (Makuuchi incision) and reverse L incision (modified Makuuchi incision) [5,6].

All of these incisions can be used and it is up to the surgeon's preference. But it is obvious that, surgeons require automatic retractors in order to obtain optimal exposure with these incisions. In other words, automatic retractors are limiting factors for these incisions except bilateral subcostal incision. Here we describe how to provide excellent exposure with combining bilateral subcostal incision and simple traction sutures without using automatic retractors. We think not to depend on an automatic retractor for optimal exposure is important. Because, it cannot be possible for all surgeons to utilize automatic retractors routinely due to various limiting factors. Thus, we suggest this simple technique is feasible to obtain optimal exposure in all kinds of upper abdominal surgery even in case of exigency of automatic retractors.

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4. Patnaik VVG, Singla RK, Bansal VK. Surgical Incisions-Their Anatomical Basis Part IV-Abdomen. *J Anat Soc India* 2001;50:170-8.
5. Takasaki K. Glissonean Pedicle Transection Method for Hepatic Resection. 1st ed. Japan, Springer, 2007.
6. Chang SB, Palavecino M, Wray CJ, Kishi Y, Pisters PW, Wauthey JN. Modified Makuuchi incision for foregut procedures. *Arch Surg* 2010;145(3):281-4.