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Role of Laparoscopic Splenectomy in Massive and Supramassive Splenomegaly

Mohammad Kermansaravi[1,2], Foolad Eghbali[1,2] and Abdolreza Pazouki[1,2]*

[1]Minimally Invasive Surgery Research Center, Iran University of Medical Sciences, Iran

[2]Center of Excellence of European Branch of International Federation for Surgery of Obesity, Iran

Abstract

Laparoscopic splenectomy that was first introduced in 1991, with new advances in laparoscopic techniques, technologies and surgeon's experience, has become the procedure of choice for splenectomy even in massive and supramassive spleens, although there are some controversies in few circumstances.

Keywords: Laparoscopic splenectomy; Splenomegaly; Massive; Supramassive

Introduction

Laparoscopic Splenectomy (LS) that was first time described by Delaitre and Maignien in 1991 [1,2], becomes the surgical procedure of choice for splenectomy in normal to moderate size spleens [1,3,4], but is on debate in massive and supramassive splenomegaly [2,3].

Definitions

Some references define maximal spleen diameter greater than 15 cm and 20 cm as splenomegaly and massive splenomegaly respectively [3]. Also splenic craniocaudal length greater than 17 cm and 22 cm and splenic weight above 600 gr and 1600 gr are defined as massive and supramassive splenomegaly sequentially [5].

Indications

Now-a-days LS is procedure of choice not only for benign diseases such as Idiopathic Thrombocytopenic Purpura (ITP), Autoimmune Hemolytic Anemia (AIHA), Hereditary Spherocytosis (HS), Sickle Cell Anemia (SCA) complications and Pyruvate Kinase Deficiency (PKD), but also in malignant hematologic diseases such as Non-Hodgkin' lymphoma and leukemia [2-8].

Contraindications and Limitations

Although there areno absolute contraindications for LS, but European Association for Endoscopic Surgery (EAES) consider uncorrected severe coagulopathy, splenic maximal diameter greater than 27 cm and Portal Hypertension (PH) secondary to cirrhosis as contraindications [8]. Splenic weight above 2000 gr and maximal splenic diameter >23 cm also are considered as relative contraindications for LS [2]. In massive and supramassive spleens, the smaller working space after sufficient pneumoperitoneum, the increased risk of intraoperative bleeding, conversion to Open Splenectomy (OS), more difficulty in specimen retrieval and longer operation time are also some limitations [6,9] and so some references recommend to convert to Hand Assisted Laparoscopic Surgery (HALS) in these situations [2]. A recent study shows that some factors such as older age (especially over 60 yr), male gender, malignant pathology, spleen weight above 1000 gr are associated with more difficult LS and higher probability for conversion to OS [10].

Advantages of Laparoscopy

Different studies demonstrated that LS in experienced hands, even for massive and supramassive spleens are safe and feasible [2,11,12] and also show that experience of surgeon is more important than spleen size for LS success [3-5,7,11,12]. Also it is proven that LS has some significant advantages to HALS and OS, such as shorter hospital stay, faster recovery, less intraoperative bleeding and need for transfusion, earlier starting of oral feeding, less postoperative pain, less complications and better Quality Of Life (QOL) [3,5,12-14]. One study shows the efficacy and safety of LS in splenomegaly

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Correspondence:
Mohammad Kermansaravi, Minimally Invasive Surgery Research Center, Iran University of Medical Sciences, Hazrat-e-Rasool Hospital, Shahid Mansouri Ave, Niyayesh St. Sattarkhan St, Setayesh Street No. 98, Tehran, Iran, Tel: 009866555448; Fax: +98-21-66501113;
E-mail: mkermansaravi@yahoo.com

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and hypersplenism secondary to PH and liver cirrhosis [15].

Lap Splenectomy in Children

Some studies confirm the safety and feasibility of LS in children with massive splenomegaly and also its superiority on HALS and OS [9,14].

Conclusion

Recent evidences support LS as the procedure of choice in massive and supramassive spleens in any ages, any sizes and any pathology especially by experienced laparoscopic surgeon.

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