

SHORT-TERM OUTCOMES OF LAPAROSCOPIC LEFT LATERAL SECTIONECTOMY FOR HEPATOCELLULAR CARCINOMA TREATMENT IN DEPARTMENT OF HEPATOBILIARY AND PANCREATIC SURGERY – NATIONAL CANCER HOSPITAL

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SUMMARY

Background: Laparoscopic left lateral sectionectomy (LLLS) is indicated for liver tumors which locate in easily accessible locations (left lateral section, left lobe, ...), with small sizes,... Feasibility, safety also depend on surgeon skills, equipments.

Objectives: Evaluate short-term outcomes of LLLS to treat hepatocellular carcinoma.

Subjects and methods: a prospective cross-sectional study, including 13 patients who diagnosed with hepatocellular carcinoma in left lateral section of the liver, was indicated with LLLS in Department of Hepatobiliary and Pancreatic Surgery – National Cancer Hospital from 8/2018 to 4/2019.

Results: Male:female ratio is 5.49: 1. Mean age is 58.46 ± 8.67 years old (38 - 77 years old). 30.8% patients have got hepatitis B virus. 46.2% patients have got alcoholism. 100% patients have Child - Pugh A. The successful rate of LLLS is 100%. No intraoperative accidents are recorded. Mean operation time is 163.08 ± 14.94 minutes (140 - 180 minutes). No patients need intraoperative blood transfusions. No postoperative complications. Mean length of postoperative hospital stay is 7.54 ± 1.15 days (6-10 days). No postoperation death within 30 days.

Conclusions: LLLS for hepatocellular carcinoma treatment is a simple, safe, highly feasible surgery with low risk of complications, rapid postoperative recovery and a short hospital stay.

Keywords: Hepatocellular carcinoma, laparoscopic surgery, left lateral sectionectomy.

I. BACKGROUND

Hepatocellular carcinoma is a common malignant disease in Vietnam and around the world. It is related to hepatitis B, C virus infection, alcoholism,... with high mortality rates. There are some manners of treatment but liver resection is still the most important and basic method. With improvement of knowledges, equipments, laparoscopic surgery is becoming more and more popular and bring many benefits to patients (postoperative pain relief, shortened hospital stay, aesthetics, ...) with low

risks of complications and similar to open surgery. Laparoscopic surgery is indicated for liver tumors in an easily accessible location by laparoscopy (left liver, left lobe of the liver, ...), with not too largesizes, ... and becoming an internal trend of hepatectomy gradually.

With above reasons, we performed this research with 2 objectives:

1. Describe clinical and paraclinical characteristics of patients with laparoscopic left lateral sectionectomy (LLLS) for hepatocellular carci-

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noma treatment.

2. Evaluateshort – term outcomes of laparoscopic left lateral sectionectomy (LLS) for hepatocellular carcinoma treatment.

II. SUBJECTS AND METHODS

2.1. Subjects: From 8/2018 to 4/2019, there are 13 patients underwent LLS for hepatocellular carcinoma treatment.

2.2. Methods

*** Research design:** prospective descriptive cross-sectional study.

*** Techniques**

- **Positions:** Patients are in supine position. Surgeon stands in right side of patients. First assistant stands in same side with surgeon and holds camera, second assistant stands in opposite side.

- **Set up trocars:** we usually use 4 to 5 trocars with 1 trocar 11mm just above umbilicus to insert Camera; 1 trocar 12mm in right side to insert Stapler, CUSA; 1 trocar 5mm just below right costal margin; 1 trocar 5mm just below left costal margin and 1 trocar 5mm on the right side, just below the umbilicus (we use 5th trocar in 8 recent patients to clamp the pedicle Glissonian pedicle outside the abdomen with a Kelly pince).

- **Inflate:** we pump carbon dioxide into abdomen with pressure < 12mmHg and rate of 2.5 liters/minute.

- **Control glissonian pedicle:** We use Pringle maneuver to control glissonian pedicle. Open the small omentum, insert a Nelaton under pedicle to Winslow foramen. Insert Nelaton inside a short plastic tube which is made from a 14CH silicone drain to clamp pedicle inside the abdomen. We use two techniques to control the pedicle. With the first 5 patients, we use hemolock to clamp Nelaton. With the last 8 patients, we use Kelly pinceto clamp the pedicle from outside of the abdomen through 5th trocar (5mm type). We clamp pedicle continuously for 15 minutes then remove clamp for 5 minutes and repeat that cycle every when needed.

- **Left hepatic mobilization:** dissect falciform ligaments, left coronary ligament.

- **Parenchyma transection:** we use Ligasure, CUSA, clips, Hemolocksto control bleeding, bile leakage. Left pedicle and left hepatic vein are dissected by 2 Staplers.

- Insert drain.

- Takespecimen out.

- Close the abdomen.

III. RESULTS

3.1. Male: Female ratio ≈ 5,49:1

3.2. Mean Age: 58,46± 8,67 year olds (38 – 77 year olds).

3.3. History

Virus hepatitis conditions

Virus hepatitis conditions	n	%
Virus hepatitis B	4	30.8
Virus hepatitis C	0	0
No virus hepatitis	9	69.2
Total	13	100

Alcoholism conditions

Alcoholism conditions	n	%
Yes	6	46.2
No	7	53.8
Total	13	100

3.4. Preoperative liver functions

All of patients have Child – Pugh A (5 – 6 points).

3.5. Number of lesions in CT Scanner

Number of lesions	n	%
1 node	11	84.6
2 nodes	2	15.4
Total	13	100

3.6. Position of lesions in CT Scanner

Position of lesions	n	%
Segment 2	4	30.8
Segment 3	2	15.4
Both of segment 2 and 3	7	53.8
Total	13	100

3.7. Mean size of lesions in CT Scanner

Mean size of lesions in CT Scanner is 51,6 ± 26,7 mm (19 – 98 mm).

3.8. Number of trocars

Number of trocars	n	%
4 trocars	5	38.5
5 trocars	8	61.5
Total	13	100

3.9. Mean operation time: 163.08± 14.94 minutes (140 – 180 minutes).

3.10. Intraoperative blood transfusions: no blood transfusion is required.

3.11. Intraoperative accidents: no intraoperative accidents.

3.12. Postoperative complications: no postoperative complications.

3.13. The successful rate of LLLS is 100%.

3.14. Mean length of postoperative hospital stay is 7.54 ± 1.15 days (6-10 days).

3.15. No postoperation death within 30 days.

IV. DISCUSSIONS

4.1. Clinical and paraclinical characteristics

Male and female ratio is ≈ 5,49: 1. This result is similar to some researches that man is more popular than woman, possibly due to alcoholism and hepatitis B or C [1].

Mean age is 58.46 ± 8.67 years old (38 - 77 years old). This result is similar to some researches that the most common group is 50 – 60 years old[2], [3], [4], [5], [6].

History of hepatitis B is 30.8%, no patients with hepatitis C. 46.2% patients have alcoholism for many years. This result is similar to some researches that hepatocellular carcinoma is related to hepatitis B and C infection and alcoholism[5], [6].

100% patients with preoperative liver function are Child - Pugh A (5-6 points). This result is similar to some researches that most of patients have good liver function[6].

84.6% patients have single lesions in the left lobe. 15.4% patients have 2 lesions in the left lobe. 53.8% patients have lesions which locate in both of segment 2 and 3. The lesions which locate only

in segment 2 in 30.8% patients and locate only in segment 3 in 15.4% patients. This result is similar to some researches that one or more lesions can locate in left lobe (only in segment 2 or 3 or both of them)[7].

Mean size of lesions in CT Scanner is 51.6 ± 26.7 mm (19 - 98 mm). The largest lesion in our research is 98mm which locates only in left lobe and can be performed left lobectomy by laparoscopy. 61.5% patients have lesions smaller than 50mm. This result is similar to some researches that tumor size should be smaller than 50mm to perform by laparoscopy. However, in special conditions when the lesions develop mainly in left lobe and can be removed by laparoscopy[2], [8], [7], [4].

61.5% patients are inserted 5 trocars intraoperation and 38.5% are inserted 4 trocars intraoperation. Number of trocars depend on surgeons' experiences. Most of researches indicate that 3 - 5 trocars is enough for successful laparoscopy [2].

4.2. Short – term outcomes of laparoscopic left lateral sectionectomy (LLLS) for hepatocellular carcinoma treatment

Mean operation time is 163.08 ± 14.94 minutes (140 - 180 minutes). Many researches show that time of left lateral sectionectomy is longer than open one but improve gradually over time with the experiences of surgeons, equipments, ...[9], [10], [11], [12], [13], [14], [15].

Intraoperative blood transfusions: no intraoperative blood transfusions. This result is similar to some researches that left lateral sectionectomy is safe with small intraoperative blood loss and usually does not require blood transfusion[16], [2], [10], [17], [5].

Intraoperative accidents: we have no intraoperative accidents. Perhaps, with a small sample, we still haven't any accidents but most of researches indicate a low rate of accidents in LLLS. According to researches, some accidents can occur intraoperation such as bleeding, peritonitis due to

Hue Central Hospital

perforation of around organs (gallbladder, colon,...), hepatic venous injuries, ... These accidents are not common and easy to resolve by suturing or converting to open surgery. So this is a highly safe operation[16], [10], [17].

Postoperative complications: we have no postoperative complications. This result is similar to some researches with low rate of postoperative complications in LLLS and only require conservative treatments [16], [10]. Thus, LLLS is a safe and highly effective operation.

100% patients are performed left lateral sectionectomy by total laparoscopy. There is no conversion to open surgery. This result is similar to many researches with very high successful rate from 95% to 100%[6].

Mean length of postoperation hospital stay is 7.54 ± 1.15 days (6-10 days). This period time is different, depends on researches. Some researches show similar results [16],[2], or shorter [9], [18], [7],

[10], [19], [11], [14], [5], [6], or longer [4]than our study. But most of researches show a short period less than 7 days and shorter than open groups[12], [13], [3], [4], [15].

No postoperation death within 30 days. This result is similar to most of researches that mortality of LLLS is in low rate[2], [17], [15], [6].

V. CONCLUSIONS

The successful rate of LLLS is 100%. No intraoperative accidents. No postoperative complications. Mean operation time is 163.08 minutes. No patients need intraoperative blood transfusions. Mean length of postoperative hospital stay is 7.54 days. No postoperation death within 30 days.

Thus, LLLS is a safe and highly successful rate operation with shorter length of hospital stay than open surgery and can be applied widely and routinely.

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Short-term outcomes of laparoscopic left lateral sectionectomy...

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