

Editorial

Surgical Treatment of Polycystic Liver Disease: Extensive

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Polycystic Liver Diseases (PLD) is triggered by genetic mutation, in which cysts occur in the liver (autosomal dominant polycystic liver disease) or in combination with cysts in the kidneys [1,2]. Regarding surgical treatment options (e.g. sclerotherapy, transarterial embolization, cyst fenestration, hepatic resection and liver transplantation), amazingly, the best outcomes of these therapies seem to be similar [2-4]. The natural evolving of PLD including the volume and the number of cysts will not be changed unless liver transplantation is performed someday. Hence, up to date no consensus has been obtained on surgical options and the optimal timing of surgical intervention. Generally, only severe symptoms can affect 20% of patients who develop massive hepatomegaly with compression of the surrounding organs. Rarely, patients with PLD suffer from acute complications or liver failure [2]. Based on these basic factors, we raise an interesting but confusing issue that which one is more reasonable: extensive volume-reductive of cysts by one-step probes in single surgery or only targeted symptomatic ones alone?

Excessive surgery of unsafe or low-value are seen within daily therapies but often are recognized as a type of positive behavior. Rather than invalid efforts, medical administration department or policy-maker should move their direction toward making better use of available guideline or experts opinion or consensus. An example in which this is readily apparent involves irregular profit. The advent, increase, and decline in the use of the laparoscopic fenestration of PLD to treat highly symptomatic cysts illustrates how hold scare for targeted therapy could have changed practice much earlier [5] (Figure 1).

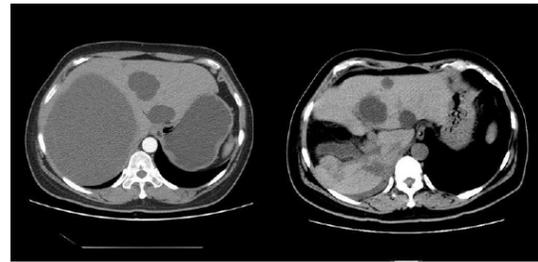


Figure 1: Deroofing of two symptomatic cysts by laparoscopic approach (pre- and post-operative CT scan).

The extensive fenestration (commonly referred to by its related patients-reported) was wrongly led by underlying awareness of surgeons (Figure 2 and 3).

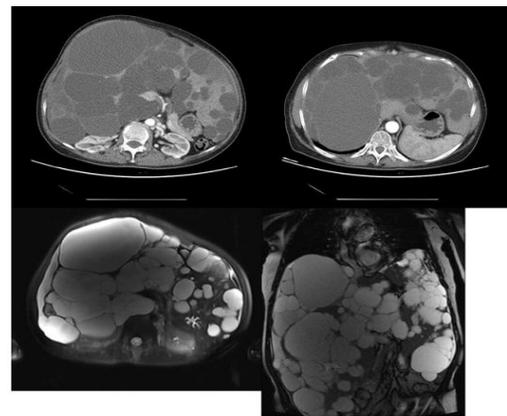


Figure 2: Extensive fenestration of cysts by laparoscopic approach, but unfortunately, the patient died of procedural bleeding and liver failure. (only pre-operative CT scan provided).



Figure 3: Left lobectomy by laparoscopic approach, but resulting in undesired hepatic venous injury and pushing patient into life-threatening (only pre-operative CT scan provided).

However, use of the old mind map sometimes may lead to fatal consequence like case B or unexpected serious hazard like case B (Figure 2) as refractory procedural bleeding, liver collapse, and subsequent liver failure development emerged describing complications or life-threatening results and uncertain effectiveness (e.g. inadequate symptom relief or new symptom emerging) that marked surgery failure and strategic failure as well. There are no broad consensus now concerning on the treatment options (e.g. extensive surgical intervention by one-step process of therapy for PLD) and optimal timing of surgical intervention should be significantly restricted, if not necessary, but why did the actively extensive intervention not produce desired effect but sometimes counterproductive results immediately? The classification can be brought to judgement before definitive surgery, it must undergo a series of clinical practice that are suitable for provisional outcomes of cystic liver. By which often prove the classification within a personal mind but other influence factors are likely being treated by expertise. Even the most well-planned protocol might not promise important safety concerns that arise after excessive extensive fenestration or other surgical ways of cystic liver adoption because of inadequate discussion or limited knowledge-related or blinded chasing technology-art from so called one-step success in single surgery.

In response to the widely popularity of prejudice for surgery, several attempts have been made to support the judgement in surgery [2-5]. This includes requirements from surgeons' notion to hospitals' policy-related reasonable profit rather than stimulating profit alone) as they become aware of the restriction. Additionally, surgeons, other clinicians, and others including patients are encouraged to voluntarily join judgement-related adverse event through the open access system. A recent investigation of authors' institution on safety of strategical errors of surgery hidden truth

behind the several failed cases due to overestimating the patients' general condition or be overconfident to one-step process. First, we noted that because the patients-reported benefits heavily from success of extensive intervention or one-step process, it likely does not response a significant portion of adverse events. Second, what do we really know about the natural history development of PLD as well as its genetic pathogenesis? In fact, whatever surgery except for liver transplantation couldn't substantially halt or curb the development of residual cysts or occult ones or fresh ones, in addition, PLD is unlikely developed to liver failure if it is under closely supervision. even with performing an appropriate surgery, skilled surgeons have no absolute promise to ensure patients' safety with free of surgery-related complications. Third, what patients with PLD need is to relief their symptoms but not cysts themselves. Without such a right understanding, surgeons are unable to estimate a basic goal of surgery and rooted expectancy of patients as well to determine if further judgement of surgery is indicated. Now some hospitals require that any abnormal outcomes of patients undergoing surgery should be registered as a unique platform so that it can be tracked and objective analysis timely.

When we reassessed indications of surgery for PLD, no current population-level estimates of extensive volume-reductive-related adverse events had been published. Instead, warning remind that the definitive surgery "Provide reasonable assurance of the safety and effectiveness" of targeted highly symptomatic cysts. even with limited clinical evidence, the expanded indications for PLD are not recommended now[1]. However, it is possible that the decision may have been different, according to the extent of disease. Although most cysts in liver seem to be isolated to deal with, that can be tracked in administrative data, the surgically performed fenestration of cysts hepatectomy-involved are deemed to be notable achievement. Available risk from authors' experience suggested that reoperations rates and subsequent liver transplantation were very low or infrequent. But massive surgery is not worthy to learn or ought to be encouraged, if any. For example, a true case was performed left live lobectomy, but the patient had to transferred minimally invasive laparoscope into open laparotomy due to hepatic venous injury (Figure 3).

Up to date, the sclerotherapy by ultrasound intervention or aspiration by endoscopic approach is still covered by physicians with even broader indications. Some experts blame that the aspiration or sclerotherapy is papillary treatment with higher recurrence rates. But the simple also means safety compared with the complex. Repeated procedures can remedy its disadvantage but no extra medical cost burden and psychological pressure when in comparison with other ways (Figure 4).



Figure 4: Ultrasound-guided aspiration with subsequent sclerotherapy (pre- and post-operative ultrasound scan).

Use of administrative data to echo excessive medical behaviors has several potential advantages. First, administrative data are required for learning from lessons and therefore are more wisdom to choose significant surgery-related hospitalizations. Second, much of the burden were produced by wrongly or inappropriate strategic option. How to reduce strategic error/risk is a new pressing issue. Third, administrative data provide both a numerator and a denominator for medical errors/risks so that the frequency of adverse surgical events can be more accurate estimated to inform further investigation. Fourth, administrative claims data include a measure of resource utilization that coincide with patients satisfy and tangible goal. The procedure codes are meet patients' essential demand rather than pushing patients into new huge potential risks by power of surgery within one-step process including extensive resection-fenestration of cysts or curative therapy by liver trans-

plantation. Safety and value is our basic principle to determine treatment options. Otherwise, our efforts will offset the right direction or baseline of moral standard, technology-art of surgery may become a killer.

In authors' opinion, for highly risk patients with PLD, patients' safety should be considered first, that also means papillary aspiration and subsequent sclerotherapy for symptomatic ones may be accessible; for low-risk patients, laparoscopic deroofing for symptomatic cysts may be priority, while extensive volume-reductive of cysts may be a big trauma with low-value.

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