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Editorial

ESWL—The Shocks are Beneficial

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Introduction

Extracorporeal shock wave lithotripsy (ESWL) was first utilized for fragmenting renal stones. Its therapeutic benefit was soon extended to biliary and pancreatic calculi. For over two decades, it has been used to fragment and clear large pancreatic duct (PD) calculi. To a lesser extent, it has also been used for fragmenting large bile duct and intrahepatic calculi not amenable to extraction by other available techniques.[1-7]

In this journal, Khan et al.[8] have published data on efficacy and safety of ESWL for large common bile duct (CBD) and PD calculi. Of the 40 patients with large CBD stones, 37 patients had complete clearance and the others were subjected to surgery. All the 21 patients with chronic calcific pancreatitis (CCP) had complete clearance. Complications were minimal and mild in both these types of calculi. The authors found no significant factors that influence fragmentation. Follow-up for a short period showed good pain relief. This has been the experience of all centers that use ESWL for pancreatic and biliary calculi. Though the numbers in this study are not large, such work is to be encouraged as CCP is widely prevalent in our country.

ESWL for Biliary Calculi

Large biliary calculi (> 1.5 cm in diameter) can be extracted by either increasing the diameter of the bile duct or by reducing the stone size. The former is achieved by large balloon dilatation of the biliary sphincter. Reduction in stone size can be achieved by fragmenting the calculi using a mechanical lithotriptor, a laser or electrohydraulic lithotriptor through a cholangioscopy and ESWL. ESWL thus is one of the many options available for large CBD calculi.[5,6] More specifically, calculi located above strictures and intrahepatic calculi that cannot be reached at cholangioscopy or by mechanical lithotriptor can be subjected to ESWL for fragmentation and subsequent extraction. Experience that shown ESWL is safe for intrahepatic calculi.[7]

ESWL for Pancreatic Calculi

ESWL remains the technique of choice for fragmentation and extraction of large PD calculi (> 0.5 cm) with subsequent relief of pain.[1-3] The use of mechanical lithotripsy for PD calculi is associated with poor results and unacceptability high complication rates.

Newer technology such as the digital SPY scope with a laser is currently recommended in those patients where fragmentation is unsuccessful after an adequately performed ESWL. Digital SPY scope is a nonstandard equipment and needs considerable expertise for proper handling. The small diameter of the PD as well as its tortuosity challenges the passage of both the SPY scope and mechanical lithotriptor. Successful fragmentation of PD calculi depends on proper selection of patients, a high-end lithotriptor, and dedicated staff who can focus the shock waves on the calculi accurately. Accurate focusing avoids collateral tissue damage and minimizes adverse effects. ESWL is a safe procedure and studies involving large number of patients have shown minimal and mild adverse effects.[3]

ESWL is not without its limitations. Success rates have varied between 40 and 100% in various studies.[4] It would be helpful if one could identify calculi that are less likely to fragment prior to the ESWL so that an alternative procedure could be planned. Recurrence rates of around 20 to 25% have been reported on long-term follow-up. Any pharmacological agent that could reduce or prevent reformation of calculi would be ideal to reduce the number of endoscopic interventions. Besides ductal hypertension secondary to stone is not the only cause of pain in CP. Patients, despite adequate PD clearance, are not relieved of pain because of other factors such as ischemia, neural entrapment, and visceral hypersensitivity. ESWL also has no effect on changing the course of the disease. It has not been shown conclusively that ESWL can prevent endocrine and exocrine dysfunction or a subsequent carcinoma. Long-term pain relief has been demonstrated in a few studies.[9] However, further validation is needed on this issue.

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In conclusion for large CBD stones, ESWL is one of the many options available. For large PD calculi, this is the treatment of choice and the standard of care. It should be offered as the first line of therapy for properly selected patients with large PD calculi. It is for this reason the articles such as the one published in this journal must be encouraged especially as the entity of CCP is widely prevalent in our country.

Conflict of Interest

None.

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