

# **Experiments and Clinical research on Micro-explosion of Biliary Calculi**

(Attached reports of 88 cases clinical applications)

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## **DIGEST**

The research project has successfully applied the technique of directional blasting in biliary calculi which is in the human liver of densely blood vessels and little space. The technique of blasting demands safety, effectiveness, practice and easy operation. The success of research has greatly decreased the rate of getting biliary calculi by surgery operation of opening abdomen, and it has successfully treat 88 patients with biliary calculi. The effects are satisfying. The research report sums up the research work on micro-explosion of biliary calculi in human body done from 1985 to 1989 by the First Affiliated Hospital of Hunan Medical university and several others universities. The topic of "Research on Micro-explosion of Biliary Calculi" is novel and has been certified strictly by several subjects and documents that there is no report on this subject at home and abroad in present. Biliary calculi is a common disease in internal and abroad. The research on Micro-explosion of biliary calculi has feasible, advanced and practical clinic significance.

The topic has been appraised by specialists of several subjects organized by the nation and passed successfully on Sept. 25th, 1990. The specialists considered the research of wide band signal amplifier for estimate the pressure, two micro-explosion devices of nonelectric initiation and electric initiation, the new technology of the terizational directional explosion and pipe sensor to estimate the shock wave pressure of explosion are original at home and abroad. In research work, we have done experiments on various kinds of biological livers and gallbladders exploding outside the body and analysed the data of the explosion course, the shock wave pressure and the products of exploding gas. On the basis of the qualities and forms of biliary calculi, physical character, high requirement of safety for biliary tracts in the livers and the fact that sizes of the endoscopes for micro-explosion devices. It has sentifie and original meaning.

XYX-2 wide band signal amplifier can estimate the explosion pressure in biliary tract at the same time of micro-explosion calculi and provide the safe data for clinical applying. The instrument has the characters of strong current, wide band and micro-pipe sensor and is used to examine varied physiological and physical twinkling feeble signal. It can be used with every endoscope like micro-explosion device, and it has low price. Based on the accurate animal experiment, it has successfully treated 88 cases and has got satisfied curative effects and no side-effect happened. It develops the speed of getting out calculi and reduces the abdomen operation. It has practically applying value.