Sonicmed Ultrasonic Bone Cutter



Clinical Application

Applicable for spinal conditions

1. Cervical spine: cervical spinal stenosis, cervical osteohyperplasia, cervical intervertebral disc herniation, cervical osteoporosis, degenerative cervical spondylolisthesis, etc

2. Thoracic vertebrae: bone spur formation of thoracic vertebrae, stenosis of thoracic intervertebral disc, thoracic intervertebral disc herniation, posterior facet joint mutation tip, intervertebral foraminal deformation, as well as spinous process changes of thoracic vertebrae, ligament calcification, etc.

3. Lumbar spine: lumbar disc herniation, lumbar spinal stenosis, degenerative lumbar spondylolisthesis, lumbar degenerative scoliosis, thoracolumbar osteoporotic fracture, severe lower back pain caused by discogenic or facet joint origin, ligament calcification, etc.

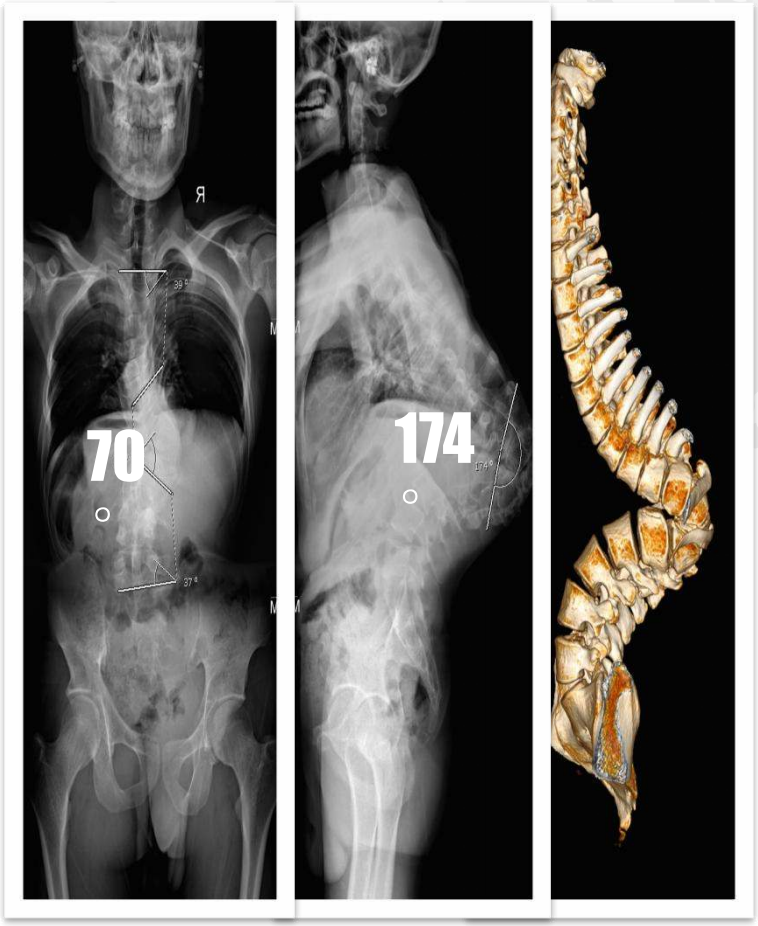


Clinical Surgery Case of the spine

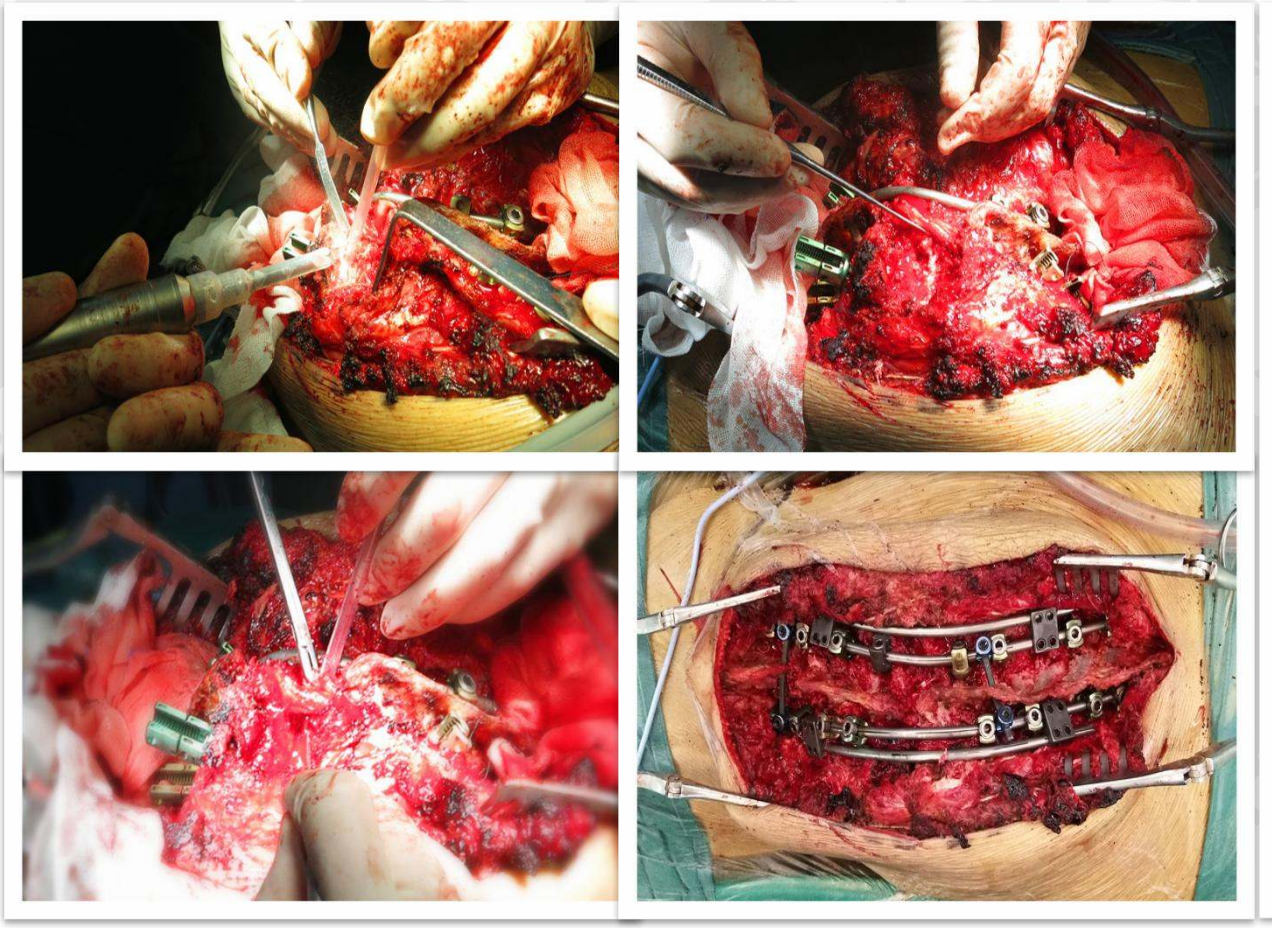
Clinical Case

Severe scoliosis orthopedics

Spine surgery of the 306th Hospital of the People's Liberation Army by Wu Jigong (70%-45ml/min)



术前



术中



术后

Clinical Case

Case study of ultrasonic bone cutter clinical surgery

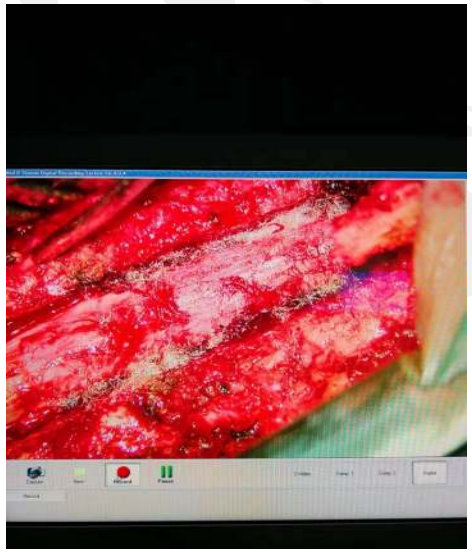


1 Beijing Jishuitan Hospital

Director Su Yibing

Microscopic subdural mass excision

(70%--50ml/min)



2 The Third Hospital of Beijing Medical University

Director Wei Feng

Posterior T1-T3 total vertebral body resection, 3D printed artificial vertebral body implanted into pedicle screws

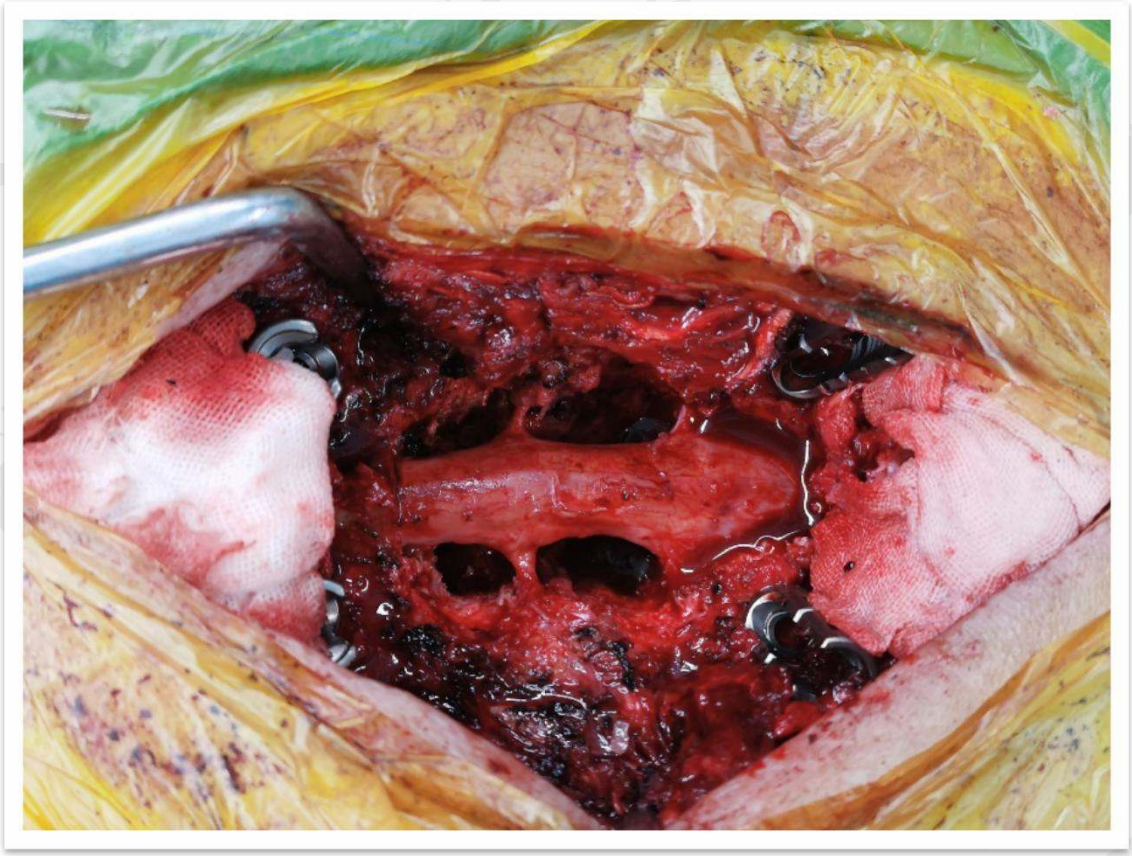
(60%--40ml/min)

3

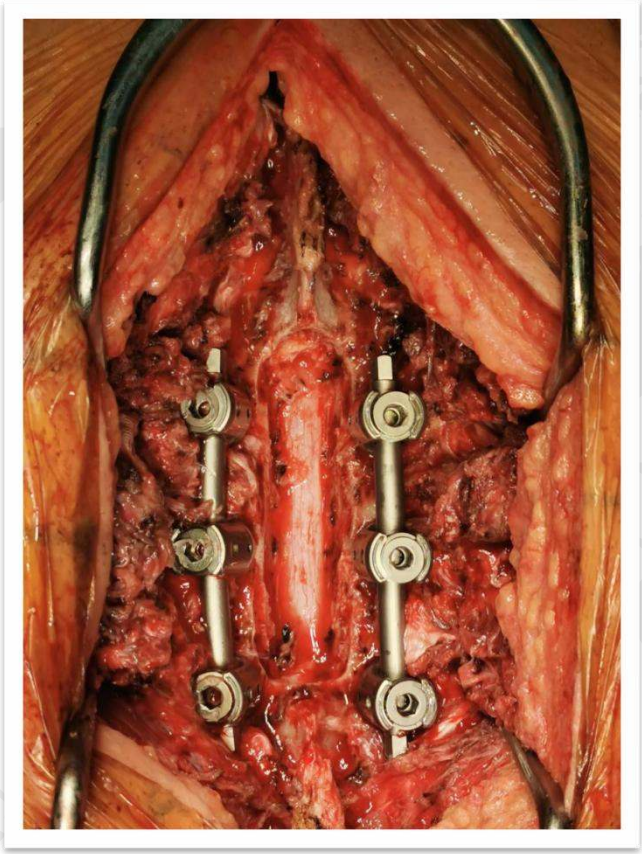
4

Clinical Case

Case study of ultrasonic bone cutter clinical surgery



Department of Orthopedics, General Hospital of the Northern Theater of Operations
Director Wang Qi
Thoracic metastases of renal cancer (T11.12) with spinal cord injury **(70%-40ml/min)**



Department of Orthopedics, Shengjing Hospital
Director Li Lei
Severe thoracic spinal stenosis **(60%-40ml/min)**





Clinical surgery cases of bone tumors

Clinical Case

Removal of spinal tumors (75%-50ml/min)

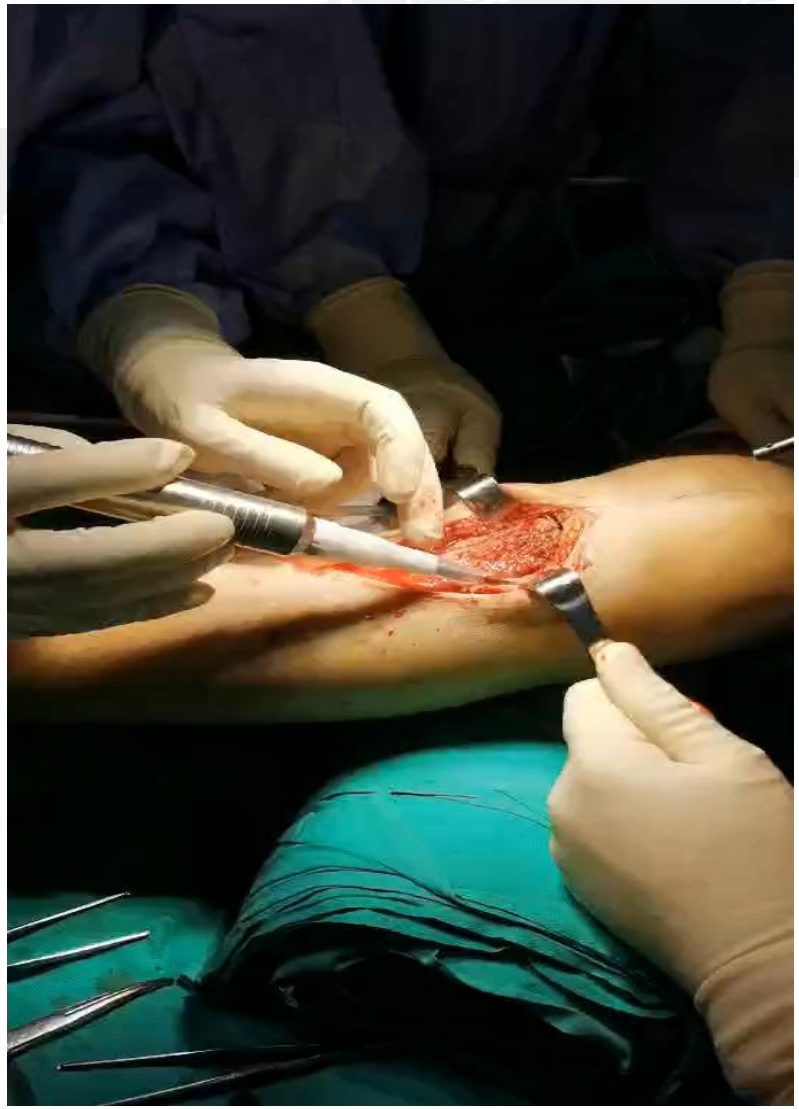




Clinical Case

Giant cell tumor of bone --- fenestration with an ultrasonic bone cutter (80%-50ml/min)

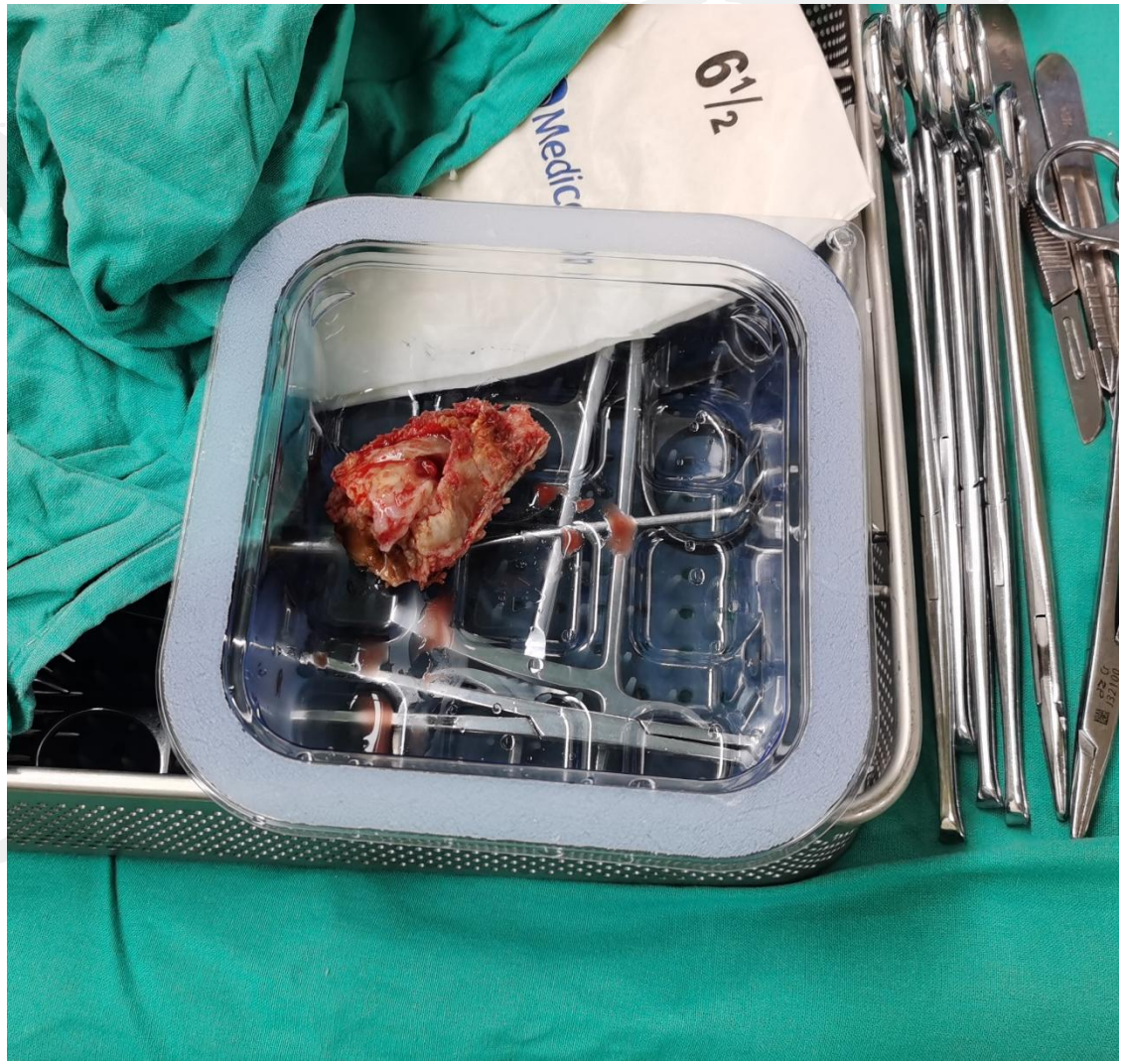




Clinical Case

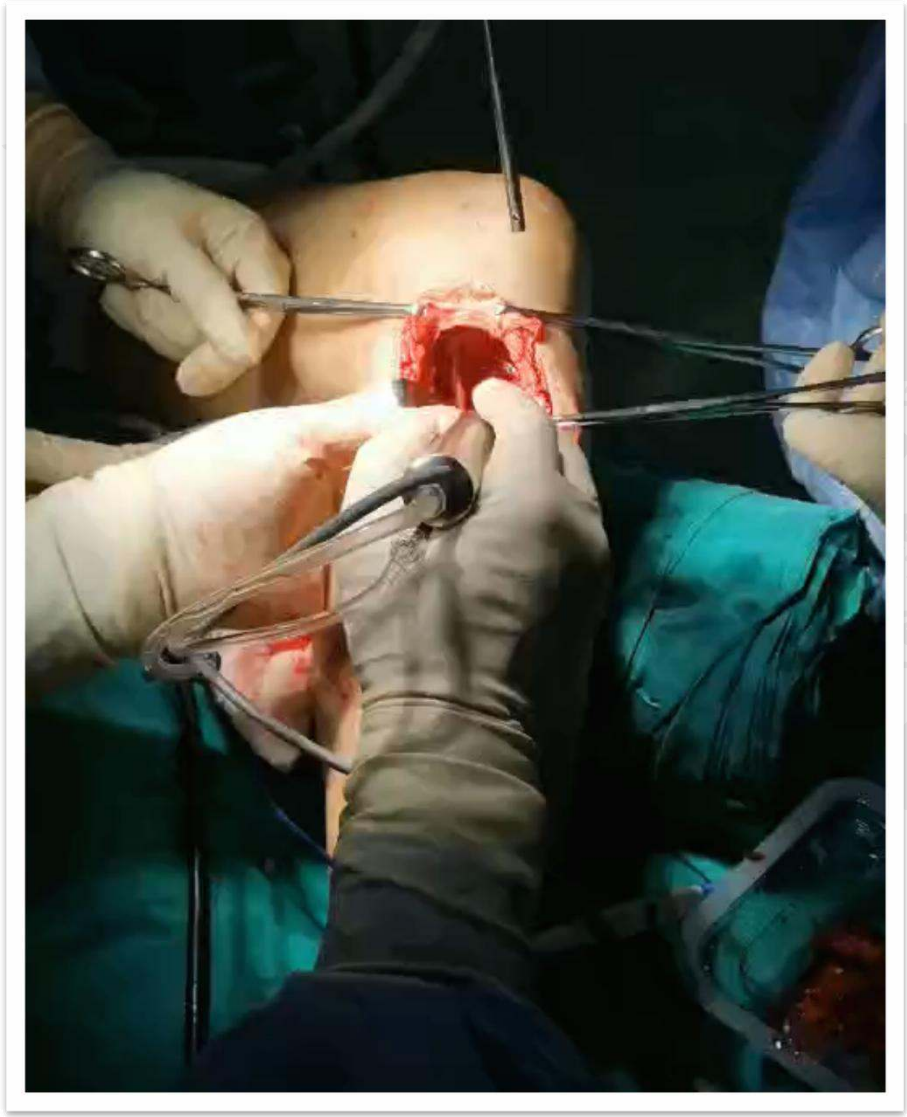
Giant cell tumors of bone -- extensively ground with an ultrasonic bone drill (80%-60ml/min)

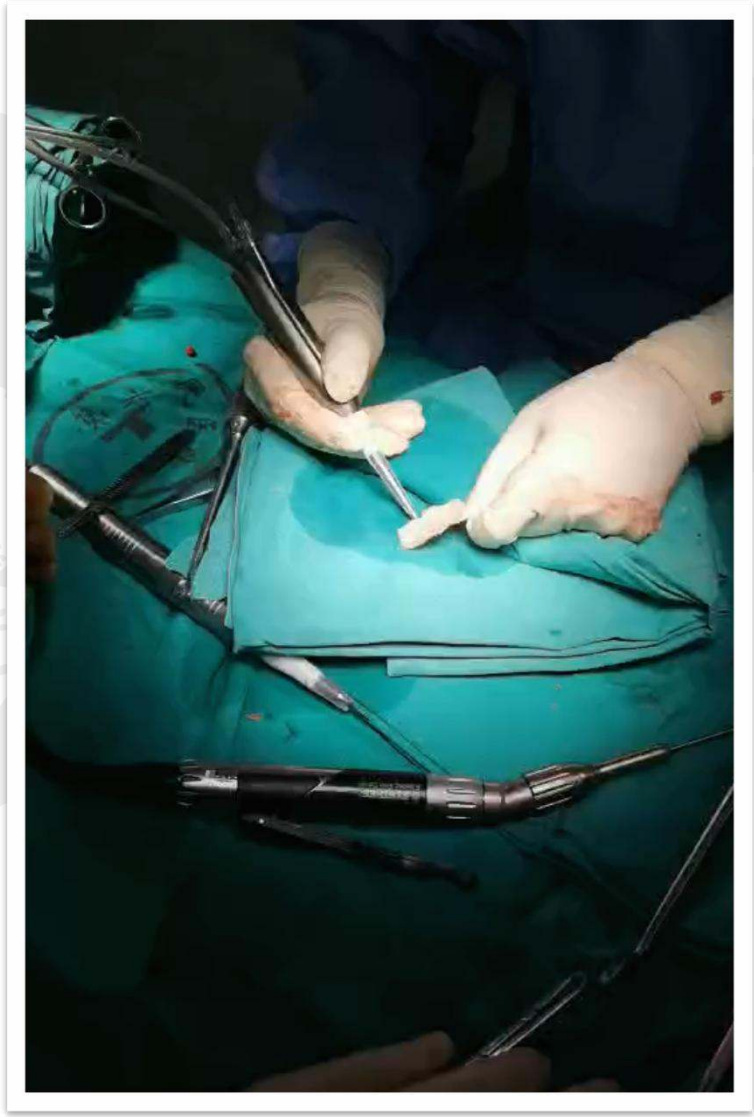




Clinical Case

Giant cell tumors of bone --- remove cancer cells with an ultrasonic aspirator (80%-50ml/min)





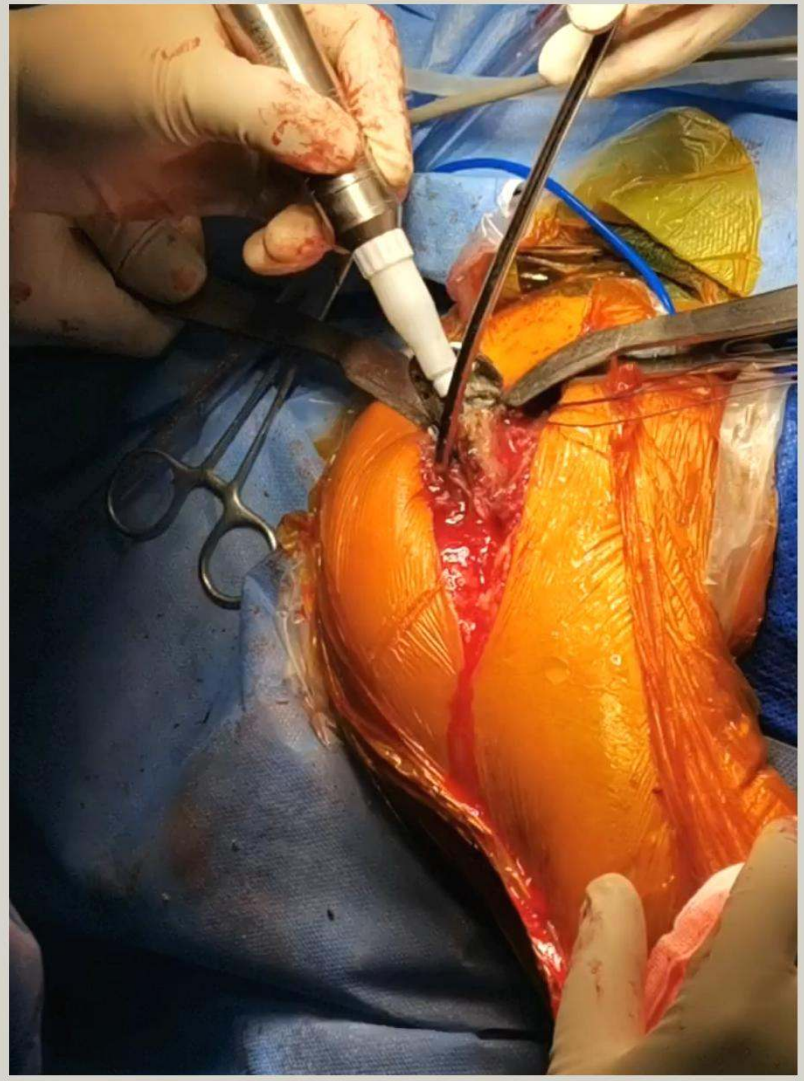


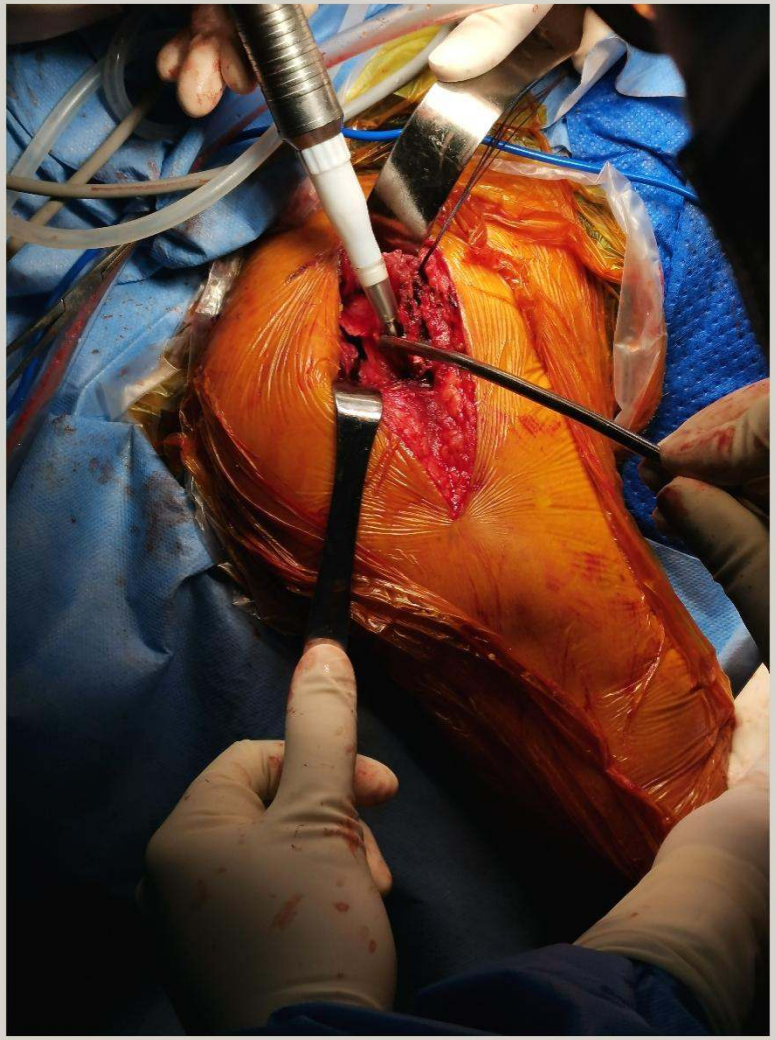


Clinical cases of joint surgery

Clinical Case

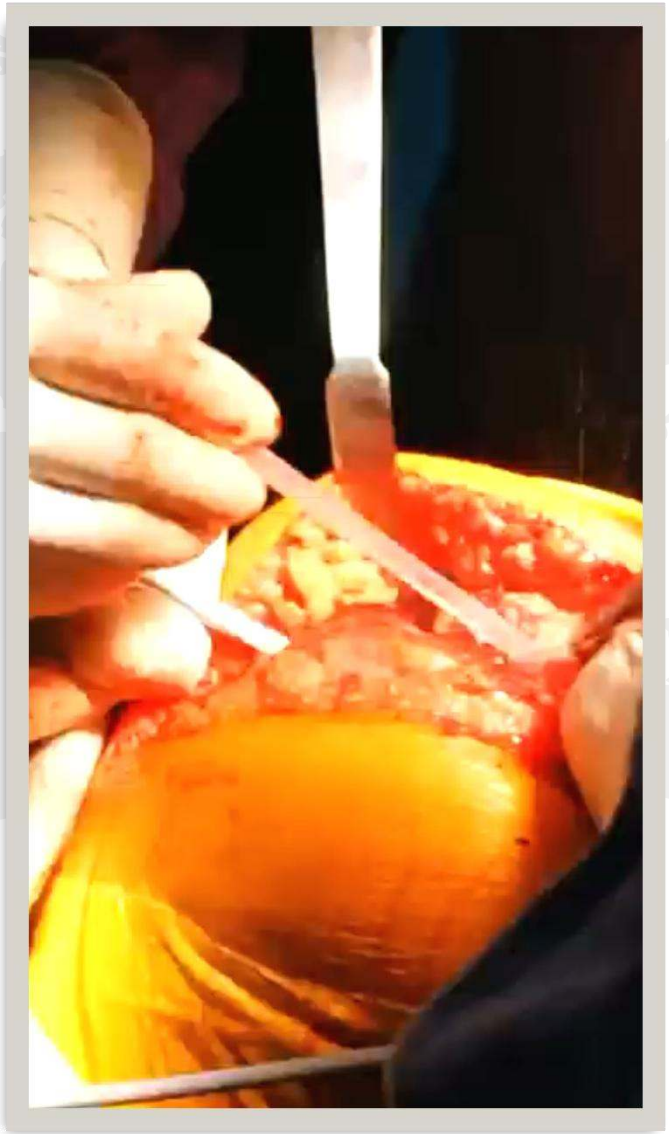
Application case of ultrasonic bone cutter in shoulder replacement surgery（80%-50ml/min)





Clinical Case

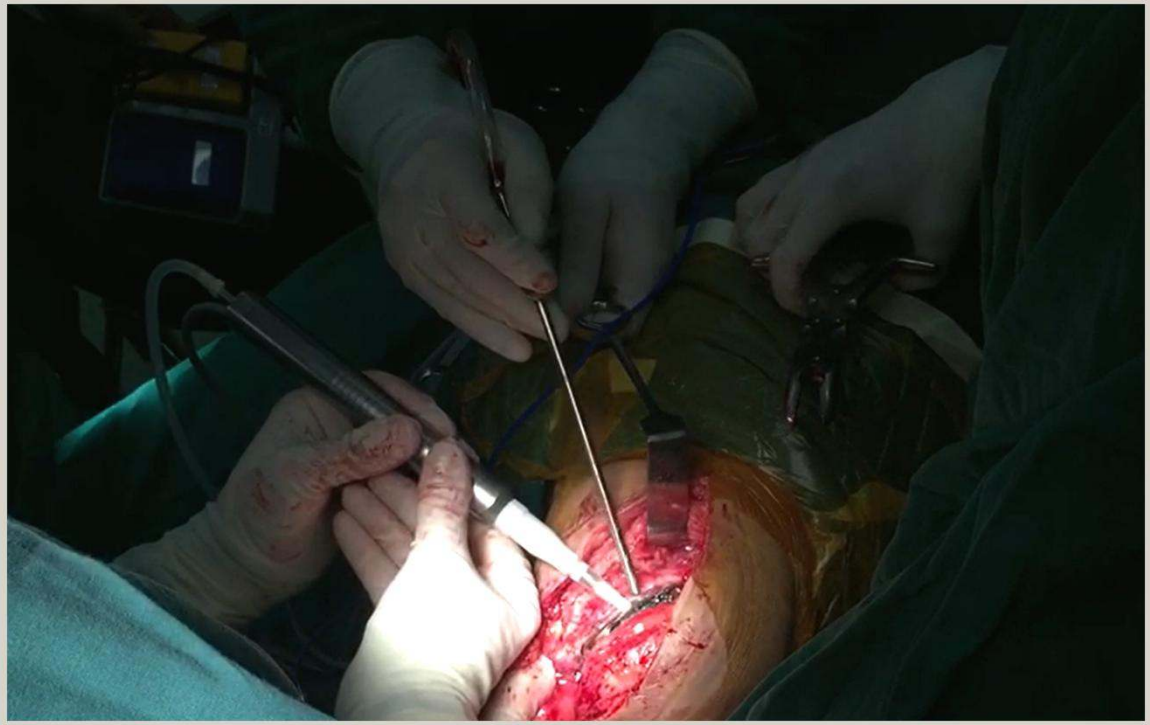
Application case of ultrasonic bone cutter in knee replacement surgery (85%-60ml/min)



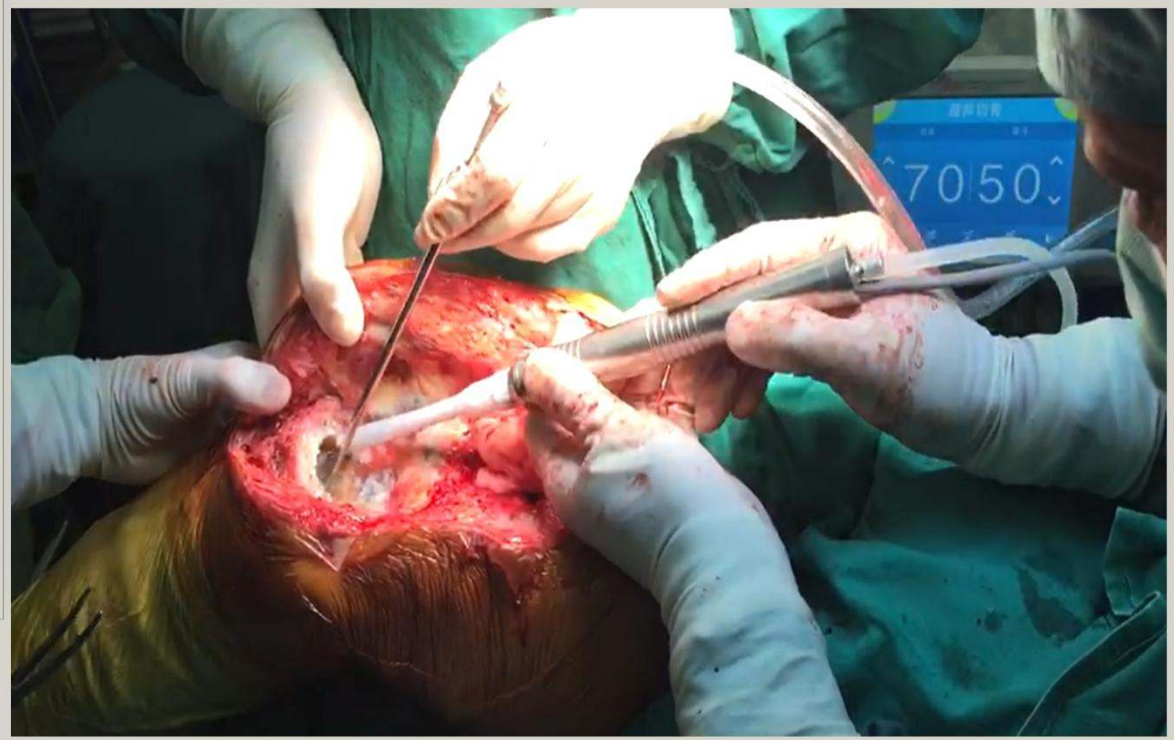


Clinical Case

The application case of ultrasonic bone cutter in the clinical operation of bone cement revision (70%-50ml/min)



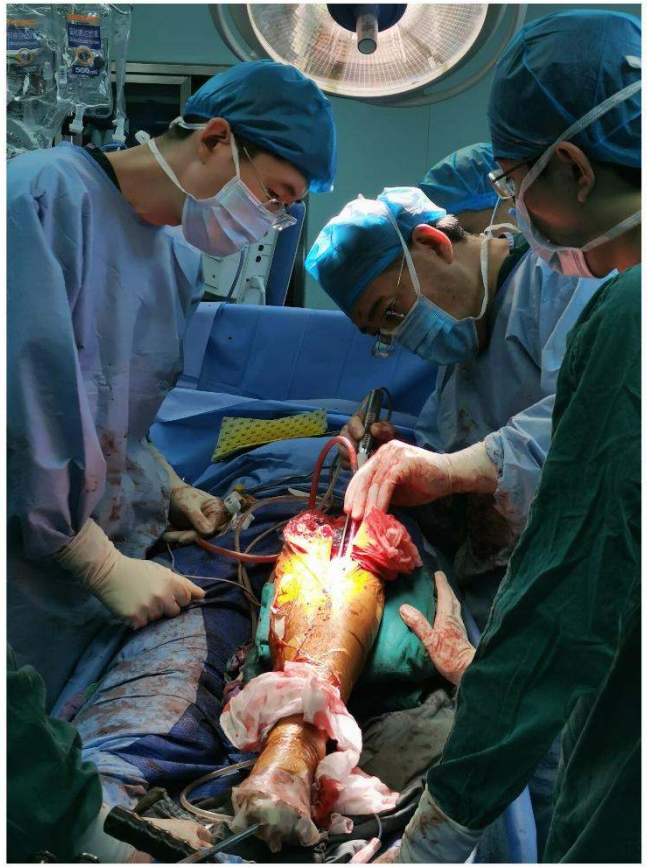
Use ultrasound bone cutter to remove the intercondylar cement

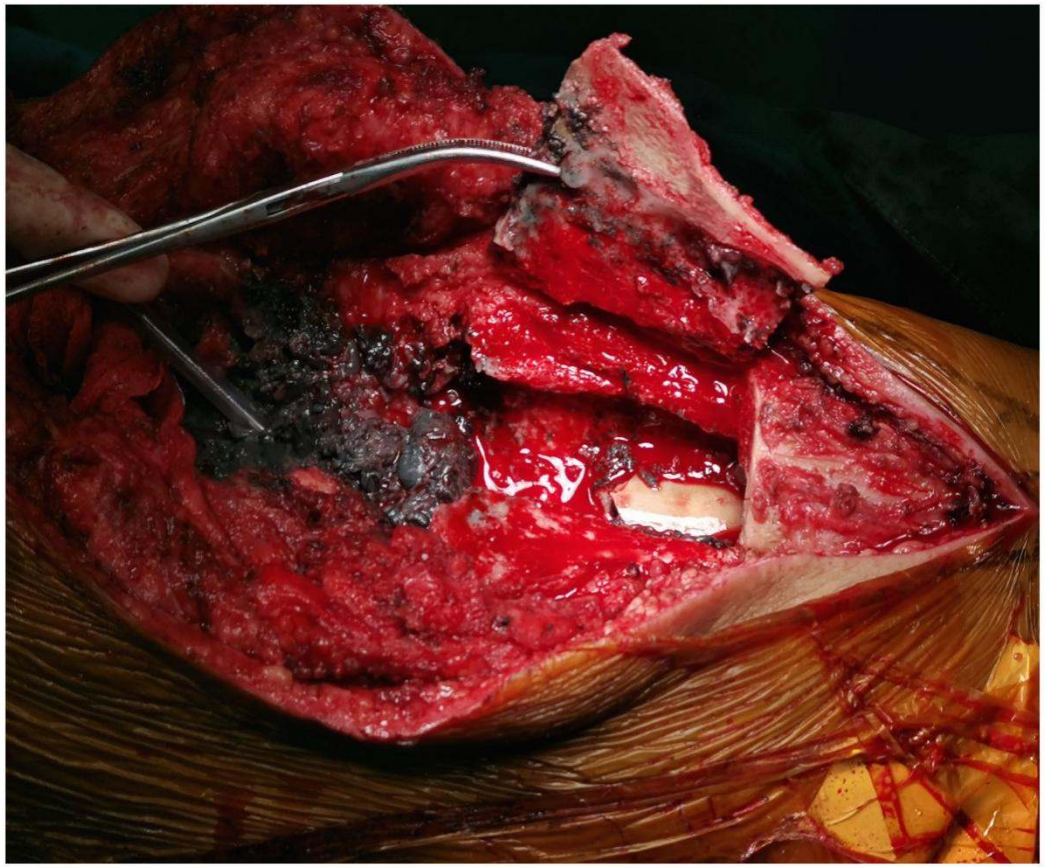


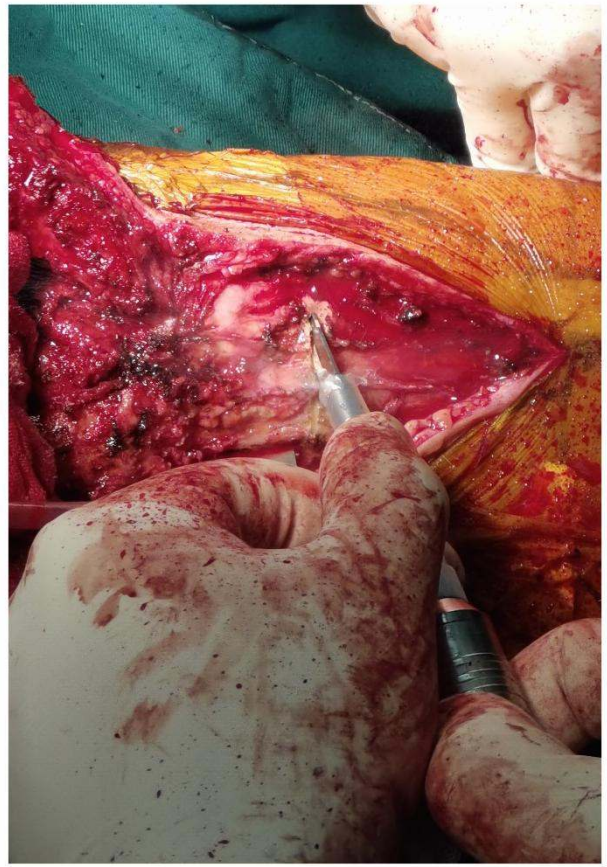
Use ultrasonic bone cutter to remove the medullary bone cement

Clinical Case

The application case of ultrasonic bone cutter in the clinical operation of bone cement revision (70%-50ml/min)







Use ultrasonic bone cutter to remove bone cement for joint revision



Hand-foot clinical surgery cases

Clinical Case

Congenital flexion ulna combined flexure ulna rotational osteotomy (80%-50ml/min)

Beijing Jishuitan Hospital

Head of the Department of Hand Surgery

Director Chen Shanlin

Description of the operation:

The control and safety of the ultrasonic bone cutter are very recognized, and the bone cutting tips and drill tips are used during the operation, which has a good field of vision, less bone consumption, and less bleeding, and is very satisfied with the surgical effect.

Tian Wen and Director Guo Yang are also applying our ultrasonic bone cutters.









Clinical Case

Hallux valgus surgery (80%-55ml/min)

Peking University Third Hospital

Joint surgery

Director Li Feng

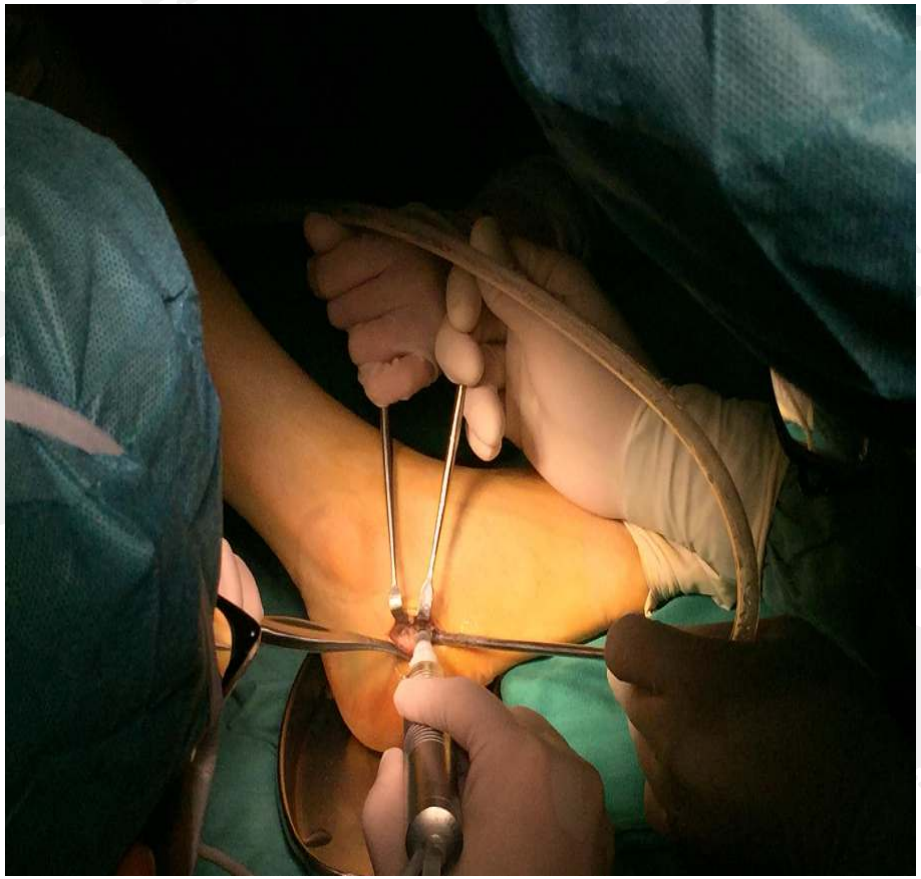
Description of the operation:

The ultrasonic bone cutter is used to perform hallux valgus surgery, which is easy to control and can cut accurately, with no burns to the bone surface during the cutting process, less bleeding, no damage to the surrounding soft tissues, and a very high comprehensive efficiency.

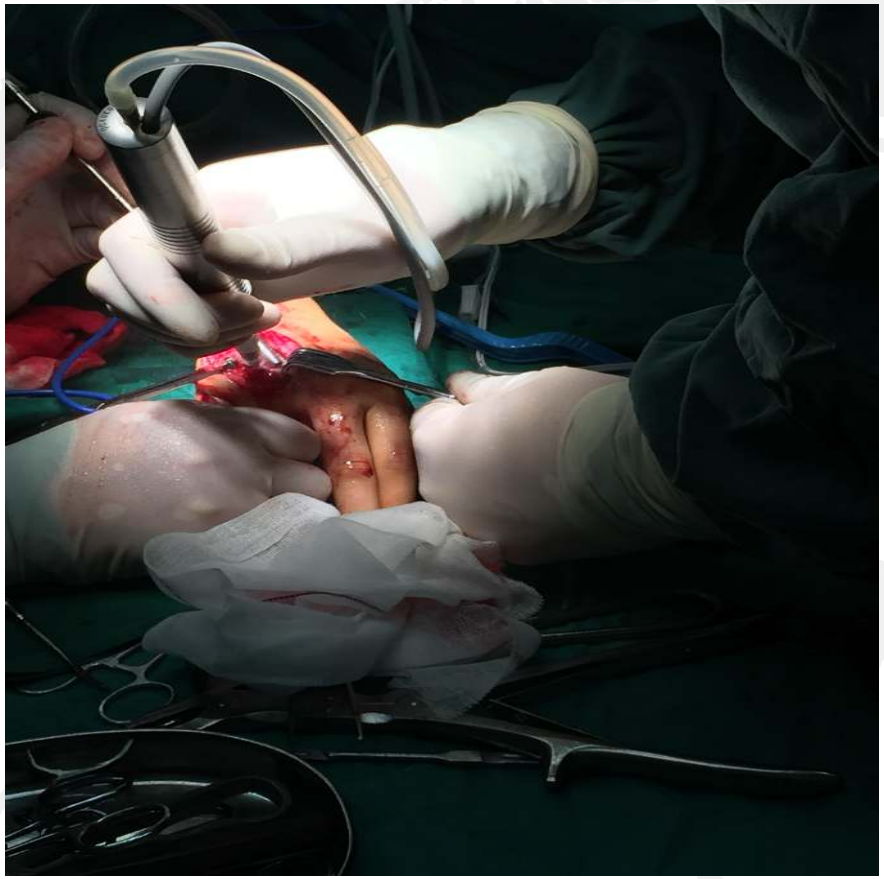


Clinical Case

The use of ultrasonic bone cutter on the long bones of the limbs (80%-50ml/min)



Ultrasound bone cutter application in curettage surgery on the heel area



Ultrasound bone cutter in metacarpal bone correction autologous bone tamponade



Oral and maxillofacial clinical surgery cases

Clinical Case

Condylar resection (75%-50ml/min)

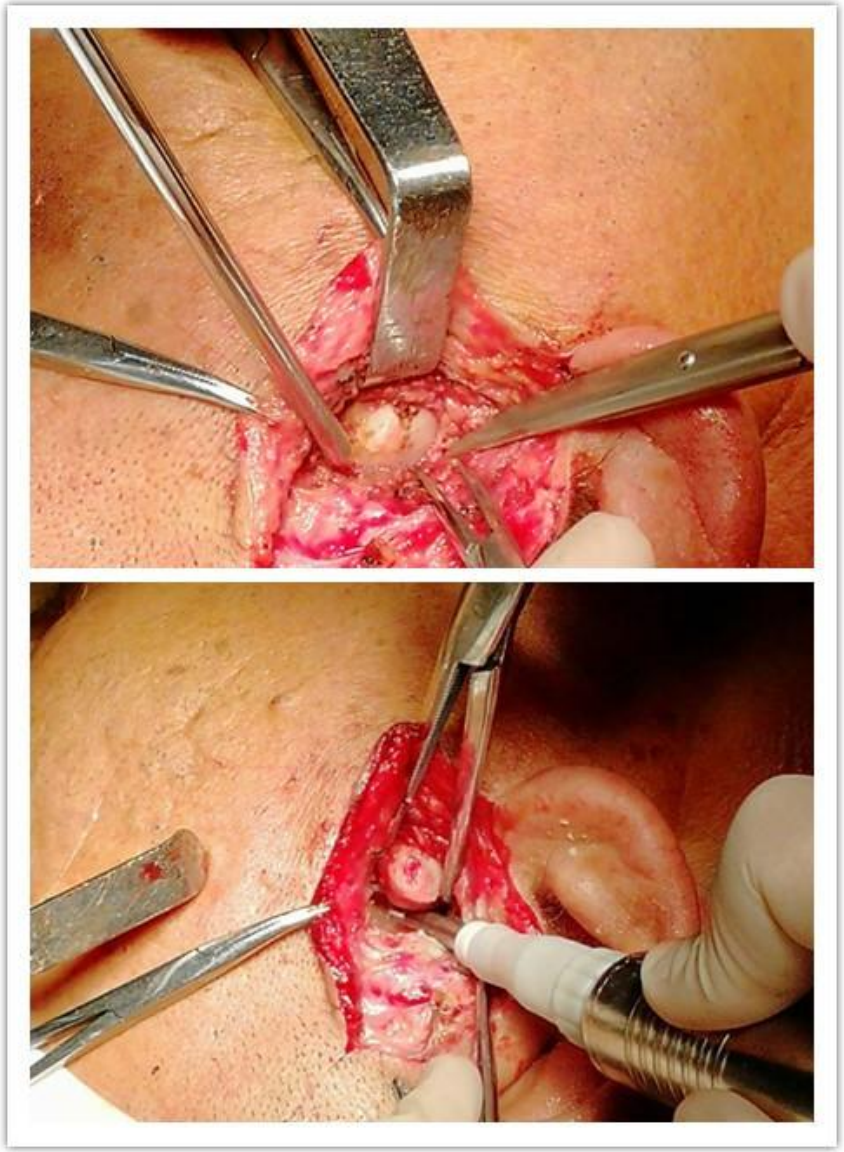
PLA General Hospital

department of stomatology

Director Zhang Haizhong

Description of the operation:

According to Director Zhang, this operation is very complex due to its proximity to the root of the ear, and the nervous system cannot be used for fear of destroying the nerve at too high temperature, and for fear of soft tissue entanglement, so it can only be used with ultrasonic bone grinding, which is relatively low in temperature, not entangled, and has high safety.



Clinical Case

Jaw tumor resection (80%-50ml/min)

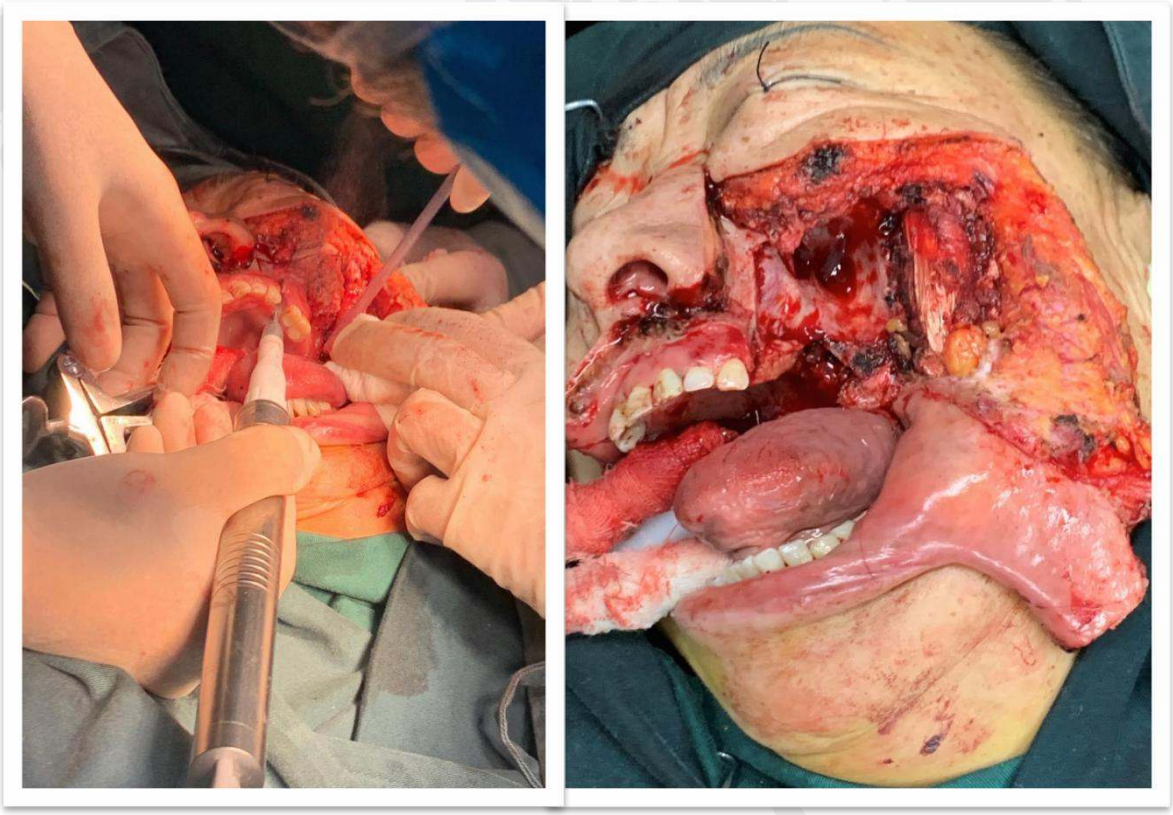
Liaoning Provincial Cancer Hospital

Head and neck surgery

Director Liu Hongwei

Description of the operation:

The first case of ultrasound bone cutter in maxillofacial surgery to carry out maxillary partial resection, the traditional surgery will use a chainsaw to cut the bone, often a lot of bleeding, because the facial nerve in the maxillofacial area is very rich, such surgery pays great attention to the protection of soft tissue nerve blood vessels. This type of surgery uses ultrasonic bone knife for the first time, and the amount of intraoperative bleeding is very small, the side vibration of the handle is very small, and the bone cutting is fast, stable and accurate, and the bone consumption is small, safe and efficient.



Clinical Case

Removal of the raised bone of the lower jaw（50%-40ml/min)

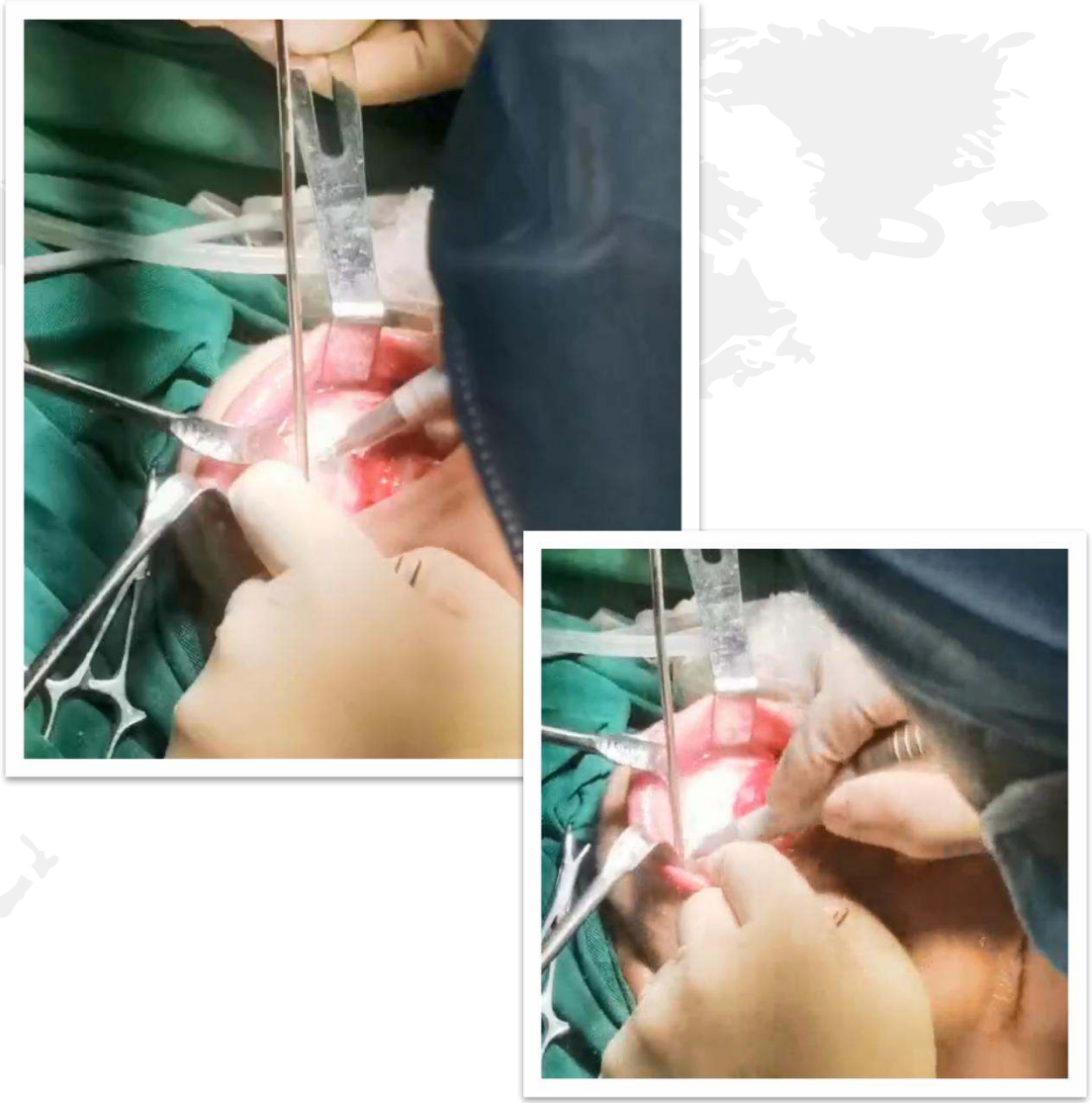
Peking University Third Hospital

orthopedics

Director Zhao Zhenming

Description of the operation:

During the operation, the ultrasonic bone drill was mainly used to grind and remove the protruding bone of the patient's lower jaw, and the use process was very good, and the surgical effect was very satisfactory.





UBE clinical surgery cases

Clinical Case

UBE fenestration of the lumbar lamina (60%-40mi/min)

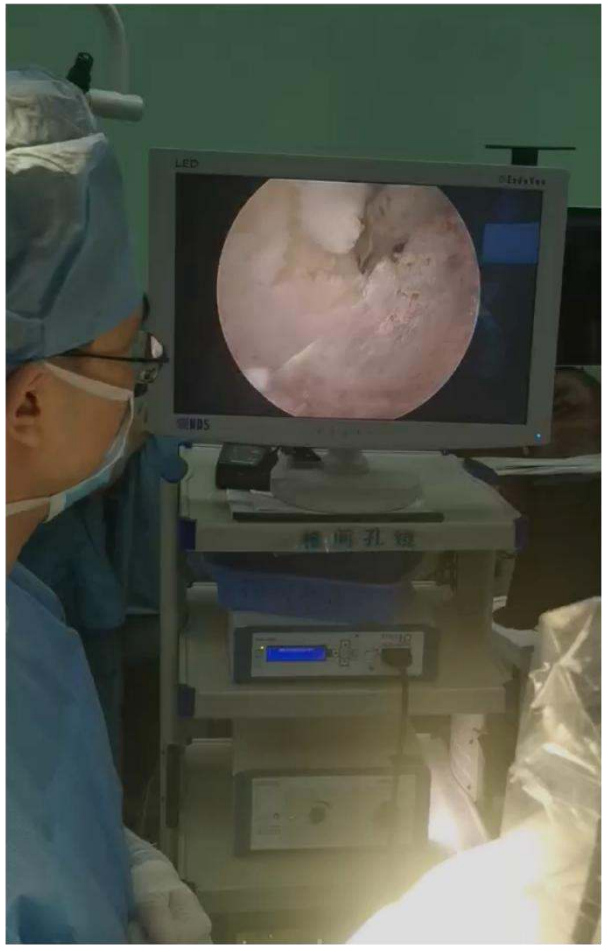
Professor Si Haipeng, Qilu Hospital of Shandong University (Qingdao Campus)

Surgery name: UBE lumbar laminate fenestration

Surgery effect: The use of ultrasonic spoon tip during surgery is very good, and Professor Si is the first to carry out the use of UBE lower spoon tip.

Expert comments: Spoon tip is more flexible, more efficient and safer under UBE.





Clinical Case

UBE cervical spinal decompression surgery (60%-40ml/min)

Lin Hao, Director of the Department of Orthopedics, Wendeng District People's Hospital

Surgery name: UBE cervical spinal decompression surgery

Surgery effect: Unilateral lamina decompression was good, the muscle strength of both upper limbs was significantly increased after surgery, the walking activity felt strong in both lower limbs, the quality of life was greatly improved, and the effect was remarkable.

Expert evaluation: Sonicmed ultrasonic bone cutter tips are used in the field of minimally invasive surgery of cervical spine UBE, which greatly improves the surgical efficiency and makes spine surgery safer, more minimally invasive and more convenient.

Application of bone cutter for clinical surgery



Application of spoon tip for clinical surgery



Application of ball tip for clinical surgery





Cases of minimally invasive clinical surgery of the spine

Clinical Case

Intervertebral foraminoscopic thoracic 7 spinal decompression (70%-50ml/min)

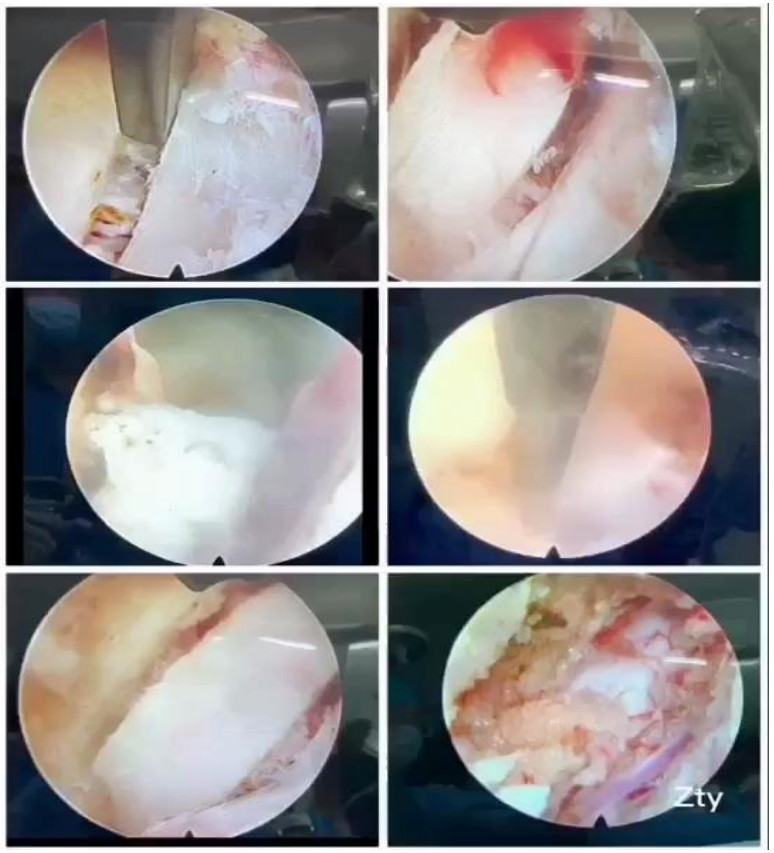
Zhu Tengyue, director of Beijing Naval General Hospital, supported difficult perforoscopic surgery in Changyi, Weifang, Shandong

Surgery name: Intervertebral foraminoscopic thoracic 7 spinal canal decompression

Surgery effect: Sonicmed ultrasonic bone cutter for spinoscopic laminectomy, with obvious advantages.

Expert evaluation: The director said that the operation is very dangerous and difficult, and can only be completed with Sonicmed ultrasonic minimally invasive bone cutter and drill.

Comments: The cumulative use time of this surgical tool is more than 1 hour, the minimally invasive module used is matched with the minimally invasive handle, and everything is normal during the operation, and the director is very satisfied with the Sonicmed ultrasonic bone cutter.



Clinical Case

Foraminoscopic Discectomy (80%-50ml/min)

Liu Bailian, Director of the Department of Spine Surgery, Yan'an Hospital, Kunming, Yunnan

Surgery Name: foraminoscopic discectomy

Surgery results: Safe and efficient for posterior thoracic spinal decompression and ligamentum flavum resection with microscopic ultrasound bone cutter. There was no tip broken during the operation.

Expert Comments: For he first time I used it, it was a little clumsy, but the thing is really good, and I believe that I will become more and more proficient in using it in the near future.







Clinical Case

Intervertebral foraminoscopic nucleus pulposus exploration and fibrous annuloplasty (70%-50ml/min)

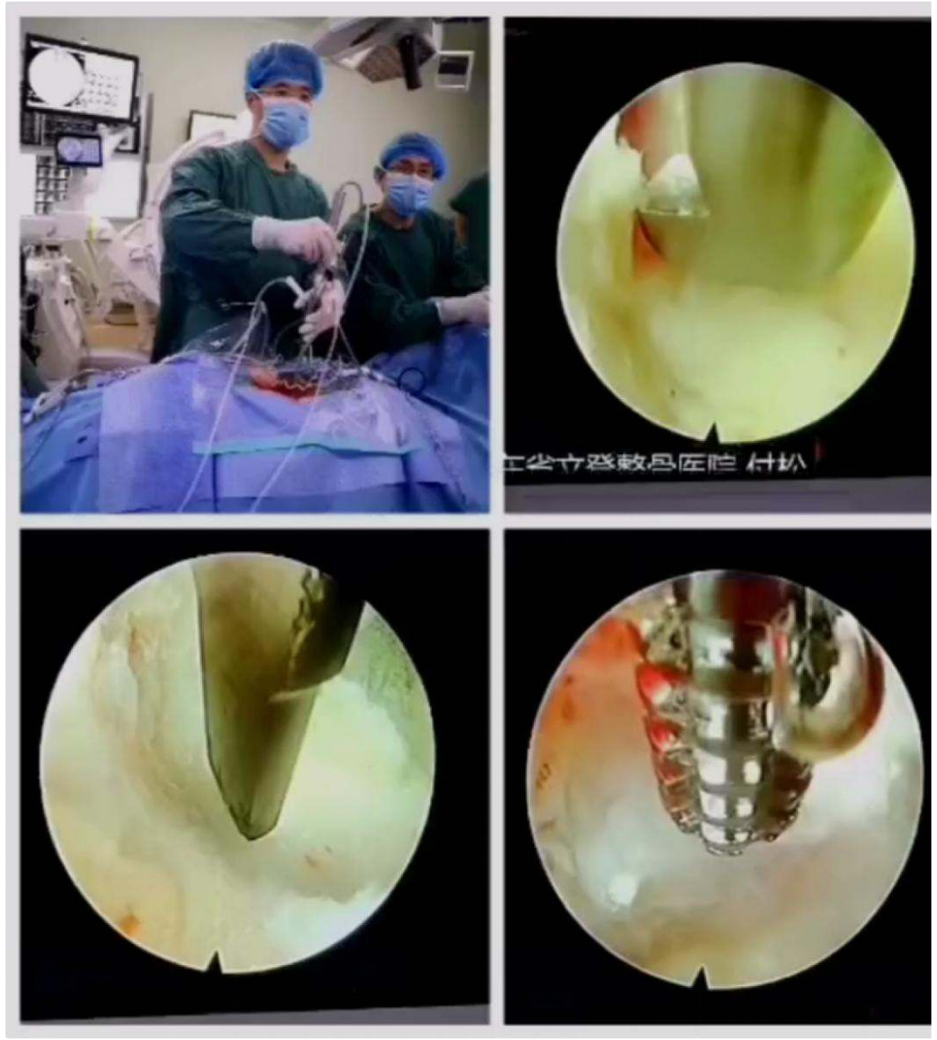
Fu Song, Director of the Department of Minimally Invasive Spine of Wendeng Osteopathic Hospital of Shandong Province

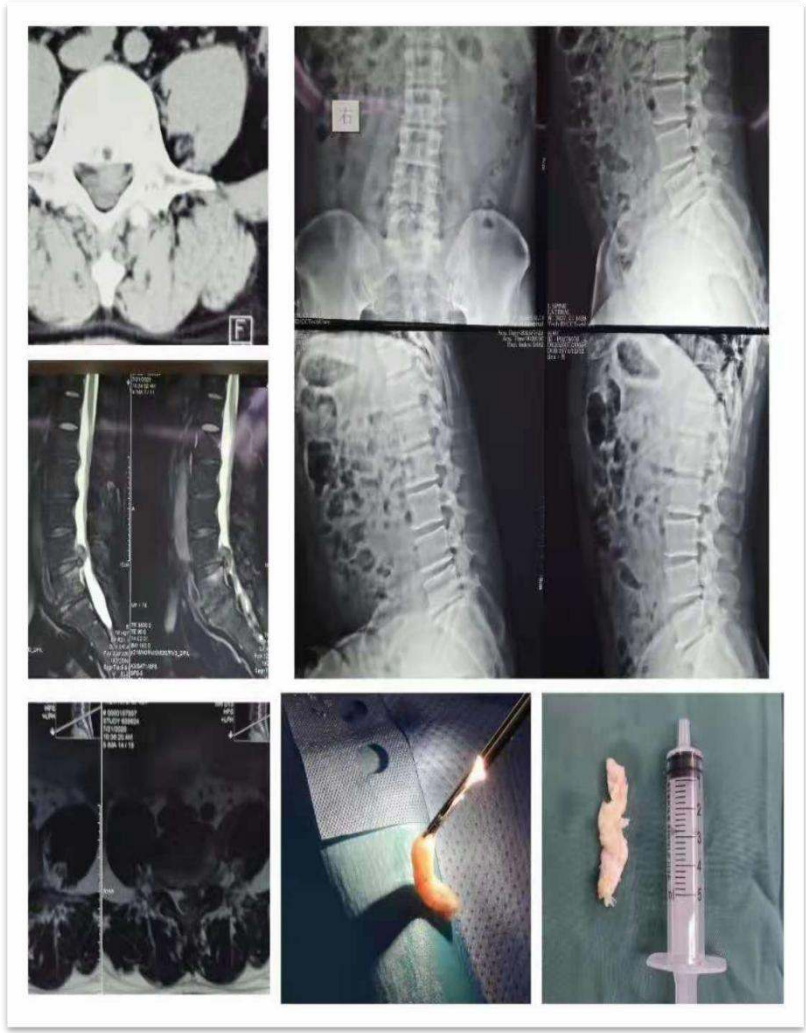
Surgery name: Fibrous annuloplasty with endoscopic nucleus pulposus exploration under local anesthesia

Surgery effect: A 45-year-old man with a severe free prolapse from the dorsal side of the head at waist 45 was removed from the posterior orifice. Ultrasound bone knife under the hole microscope, and the vertebral plate display under the scope.

Expert evaluation: It can be completely taken out thanks to the introduction of advanced concepts and tools.

The evaluation for repeated use is that the advantages of endoscopic ultrasonic bone cutter, especially in the direction of the cervicothoracic spine, are incomparable to any power system and ring saw.





Clinical Case

A case of minimally invasive surgery with ultrasonic bone cutter (75%-40ml/min)

- Shen Jian, director of the Department of Orthopedics of Beijing Hospital, used ultrasonic minimally invasive cutter and intervertebral foraminoscope to treat lumbar disc herniation

- Wang Xiaobin, director of the Department of Orthopedics of Beijing Hospital, carried out minimally invasive posterior lumbar internal fixation + interbody fusion surgery under the channel

- Director Zeng Jiancheng of West China Hospital performed minimally invasive lumbar spine surgery



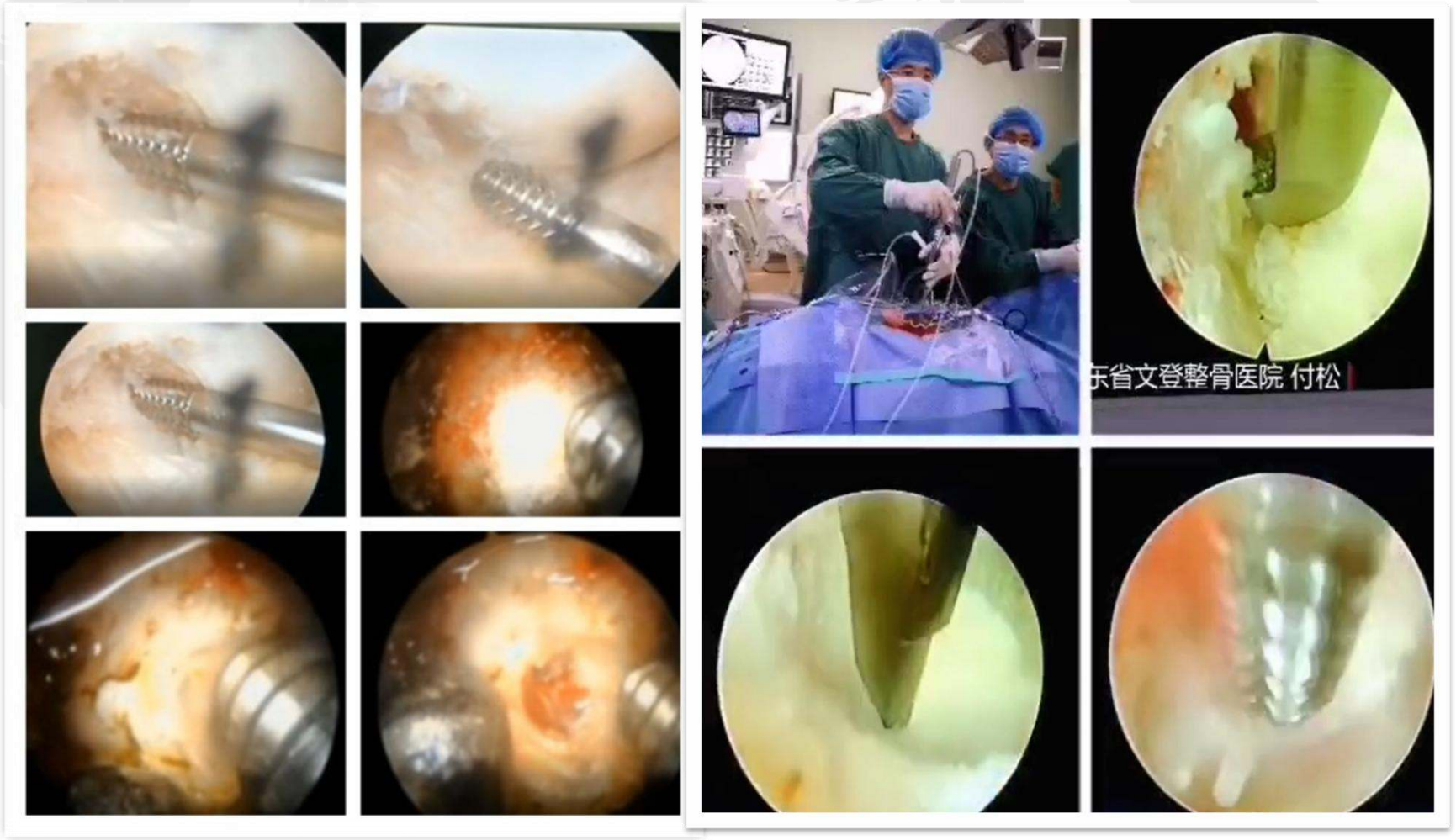
Clinical Case

A case of minimally invasive surgery with ultrasonic bone cutter (75%-50ml/min)

- Lu Honghui, director of Luxi Hospital, Tai'an Medical College, treated L45 percutaneous puncture intervertebral foraminoscopic nerve root exploration + nucleus pulposus extraction + nerve root laxity + foraminoplasty + lateral recession decompression with ultrasonic minimally invasive cutter

- Director Jiang of Xiangxi Jishou People's Hospital used 140 bone drill under arthroscopy

- Zhang Chaoyue, director of the Third Xiangya Hospital, used ultrasonic bone drill endoscopy to decompress the anterior arch process of the transpharyngeal approach of the anterior arch of the artebrae





Cases of clinical surgery on tumors

Clinical Case

Neuraxial tumor resection (75%-40ml/min)

Shenzhen Traditional Chinese Medicine Hospital

Name of surgery: Neuraxial tumor resection

Surgical process: In August 2023, Director Wang Chongyang of the Department of Neurosurgery used a bone cutter to cut the lamina, and used an aspirator to destroy and suction inside the tumor to complete the operation.

Expert evaluation: The director said that they used to use bone power grinding, the cutting speed was slow, and they were afraid of hurting the soft tissues.

Suggestions: Director Wang says that Sonicmed device is very advanced, and both ultrasonic bone cutter and aspirator are available, which is very suitable for this kind of surgery.





Clinical Case

Right tibial osteoid tumor resection + scraping + bone grafting (85%-50ml/min)

Yunnan Yuanyang People's Hospital

Surgical name: right tibial osteoid tumor resection + scraping + bone grafting

Surgical procedure: incision and peeling of soft tissue with an electric knife, grinding with a grinding drill after positioning of the C-arm machine, then cutting the bone with a knife to open a window, scraping the bone tumor, then grinding the bone wound with a grinding drill, and then backfilling the artificial bone.

Expert evaluation: Expert Chen Guoping and Director Zhou Wenxue affirmed Sonicmed bone cutter, saying that there is no way to do it without the ultrasonic bone cutter, and the bone cutter is very safe and efficient, which saves a lot of time for the operation.

Suggestions: Director Zhou said that the high power of the Sonicmed bone cutter has a way to deal with hard bones, and if you change to others, it will not move. The Sonicmed cutter is very recognized.





Clinical Case

Secondary malignancy of the multi-level vertebral spine (80%-40ml/min)

Yunnan Provincial Cancer Hospital

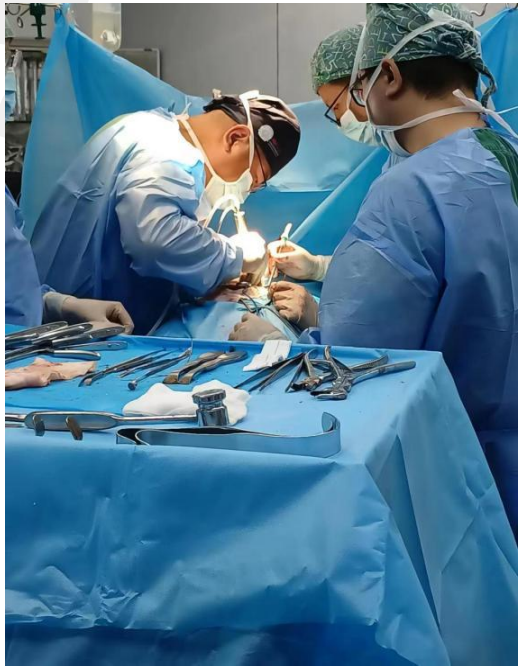
Surgical name: Secondary malignant tumor of multi-level vertebral spine

Surgical procedure: Posterior incision, exposing the vertebral spinous process, vertebral lamina and bilateral articular process, inserting bilateral pedicle screws of the vertebral body, using ultrasonic bone knife to cut the vertebral plate and blocking parts, and removing the tumor around the spine

Expert evaluation: Director Yang Zuozhang commented that the Sonicmed ultrasonic bone cutter cuts the bone quickly, the incision gap is small, and the bleeding is less during cutting.

Suggestions: Director Yang said that he is very satisfied with the power of the equipment, which saves the operation time and has a good effect of accurate bone cutting.





Clinical Case

Enlarged decompression of the spinal canal, cervical 1-7 vertebral tumor resection(80%-40ml/min)

Yunnan Provincial Cancer Hospital

Surgical name: Spinal canal enlargement decompression, cervical 1-7 vertebral tumor resection

Surgical procedure: Yang Xinghai of the Navy Changzheng Hospital was the chief surgeon, and Ma Xiang of the First Department of Orthopedics assisted in the posterior longitudinal incision of the neck, and the ultrasonic bone cutter was used to cut the vertebral plate and excess bone tissue, and the spinal canal was enlarged and decompressed, and the nerve root canal was decompressed, and the cervical 1-7 vertebral lamina tumor was resected.

Expert evaluation: Sonicmed ultrasonic bone cutter has smooth bone cutting, neat cross-section, and less bleeding

Opinion and suggestion: Ultrasonic bone cutter greatly reduces the operation time.





Clinical Case

Tumor resection in the cerebellar region of the right pontine area (85%-50ml/min) (60%-30ml/min)

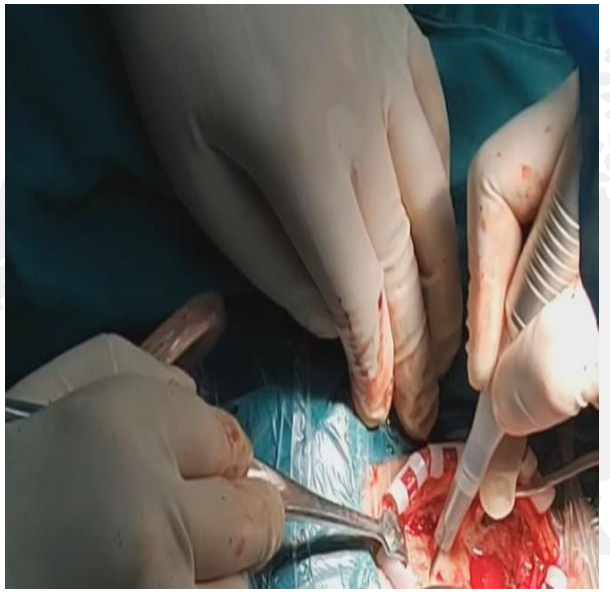
983 Hospital of the Chinese People's Liberation Army

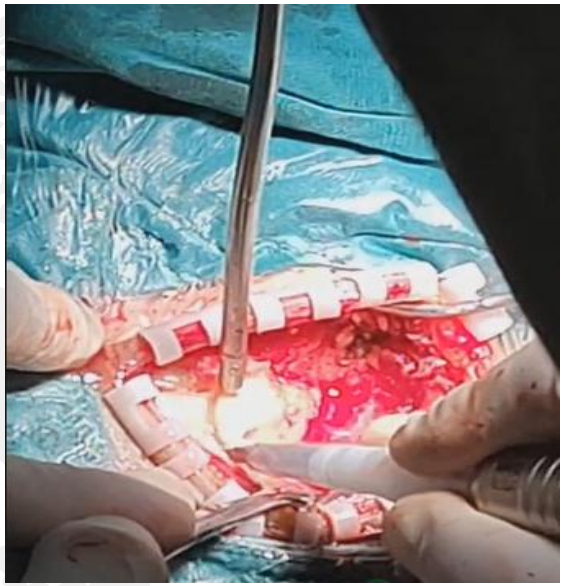
Surgical name: Tumor resection in the cerebellar region of the right pontine area

Surgical procedure: about 30*20 skull is removed with a standard cutter, and the tumor lesion is removed with an aspirator after the tumor site is exposed.

Expert evaluation: Director Li Chunbo believes that the cutting speed of the Sonicmed bone cutter is fast, the bone consumption is less, and the bleeding during the operation is less.

Suggestions: The director is very satisfied with the safety of the machine for tumor destruction and aspiration.









Clinical Case

Skull base tumor resection (80%-50ml/min)

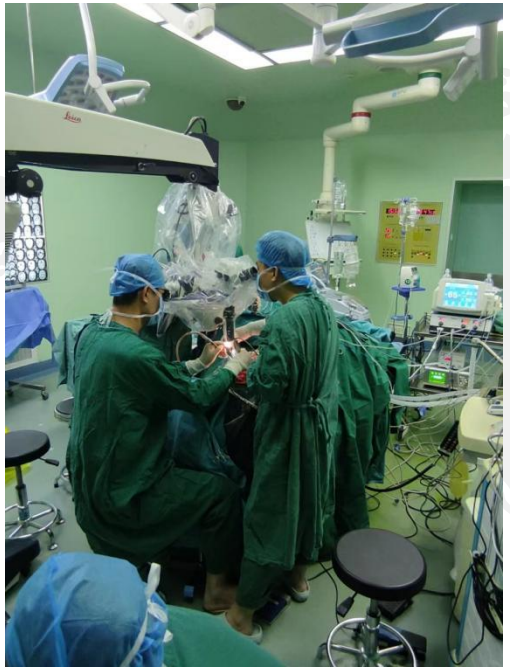
The First Hospital of Hohhot

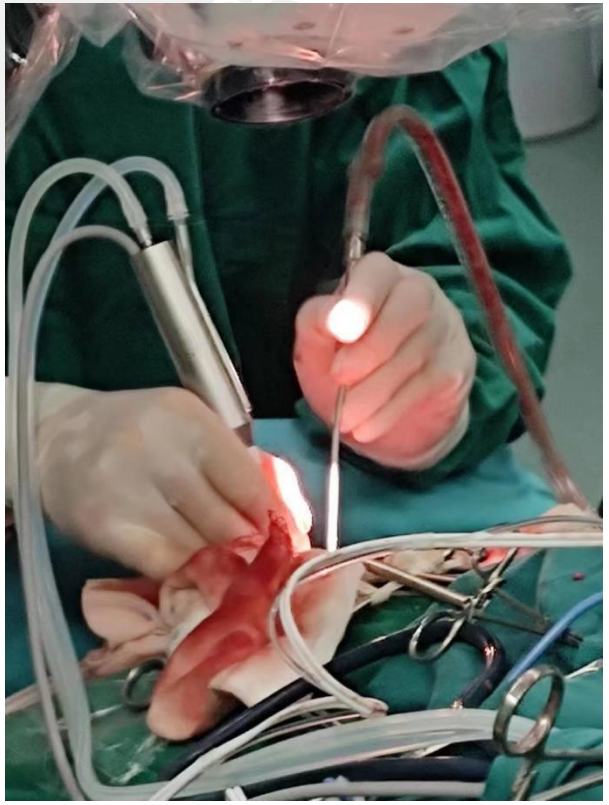
Name of surgery: Skull base tumor resection

Surgical process: Professor Zhou Dabiao of Beijing Tiantan Hospital assisted Director Wang Weizhi of Hohhot Hospital in the operation, using a Sonicmed bone cutter to remove part of the skull to open the bone window, exposing the tumor site and using an aspirator to remove the tumor lesions, and the operation was successfully completed.

Expert Comments: The results of the surgery are very good. The director said that Sonicmed device can have both ultrasonic bone cutter and aspirator, which is very suitable for their kind of surgery

Suggestions: Will continue to try and apply in the direction of neurosurgical tumors.





Clinical Case

Left proximal femur tumor resection (85%-60ml/min)

The First Affiliated Hospital of Guangzhou University of Chinese Medicine

Name of surgery: left proximal femur tumor resection

Surgical process: Director Fang Bin used the bone cutting handpiece and the short tip to cut the bone at the tibial lesion and easily remove the lesion. Then use the bone drill handpiece with the drill tip to thin the bone surface and scrape the tumor site.

Expert evaluation: Director Fang said that the bone cutter is very good, the speed is very fast, and he is very satisfied.

Suggestions: will use ultrasonic bone cutters for each applicable surgery.





Clinical Case

Resection of cerebellar pontine angle lesions (80%-50ml/min)(60%-30ml/min)

Chongqing Hospital of Traditional Chinese Medicine

Name of surgery: cerebellar pontine angle lesion resection

Surgical process: Director Wu of the Department of Neurosurgery used our Sonicmed bone cutter and aspirator to perform a microscopic cerebellar pontine angle lesion resection, first using a bone cutter tip to open the skull, and then using an ultrasonic aspirator tip to dissect the intracranial tumor after exposing the tumor site.

Expert evaluation: The intraoperative cutting speed is very fast, there is basically no bleeding, saving operation time, and the effect is great.

Suggestions: I highly recognize the accuracy and efficiency of Sonicmed products. Recognized for the safety of ultrasonic aspirators.



