

A pioneering 'pretzel' shaped surgical instrument, designed and manufactured by Surgical Innovations, has been used to carry out 'keyhole' surgery on an Asian Golden Cat at Edinburgh Zoo.

Leading vet Romain Pizzi used groundbreaking minimal invasive techniques just days before Christmas, to carry out a liver and kidney biopsy and assess whether the cat ("Ipoh") has possible polycystic disease.

The instrument PretzelFlex – because of its innovative pretzel shape - has been especially designed to hold liver and tissue during keyhole procedures. It was couriered up to the Zoo just hours before the surgery and today was the first time it has been used on an animal anywhere in the world.

The pioneering technology allowed Romain to fully explore all the abdominal organs and despite being the first time Romain has used it, the operation was a great success. Shortly after surgery the cat was up, behaving normally, and enjoyed his normal evening meal; something which would not have been possible if the procedure wasn't carried out using keyhole techniques.

Despite keyhole surgery being routine in humans, the standard procedure in animals is still open abdominal surgery. It is so rare that Prof Tang of the Ya'an Panda centre in China, who is visiting the Zoo to help the Giant Panda's settle in, watched the whole thing, with the view to apply these techniques on Panda's in his hometown of China.

Romain, a veterinary surgeon for the Royal Zoological Society of Scotland based at Edinburgh Zoo, said: "Over the last few months Ipoh has lost weight, behaved more quietly and has had a dull poorly groomed coat which led us to believe he was ill. Ultrasound examination and other testing showed us small cysts in some of the organs, but couldn't explain what they were or how to treat them.

"We needed to make a diagnosis quickly but with the help of specialist surgical instruments donated by Surgical Innovations this was made possible. I am pleased to say the whole procedure was a great success and we hope to get Ipoh back to full health soon.

"The PretzelFlex retractor is an ingenious instrument that can be passed down a very thin keyhole cannula and then formed into a large sturdy pretzel-like shape, and used, just like a hand to hold organs out of the way during a keyhole operation. It is not only one of the cleverest instruments I have ever seen, it is also one of the most beautiful."

Laparoscopic surgery is still very uncommon in veterinary medicine but it has many benefits for the animal such as a reduction in post-operative pain, faster recovery period and reduced post-operative care. It also results in both a decreased risk of infection after surgery and any wound complications.

The Royal Zoological Society of Scotland has one of the United Kingdom's most highly qualified full-time in-house veterinary services, and is the only veterinary service specialising in zoo and wildlife keyhole surgery.

Working under the direction of Simon Girling, head of the veterinary service, surgeon Romain Pizzi has performed over 500 minimally invasive surgical procedures on zoo and wildlife species ranging in size from 20grams to almost a ton. Two years ago Romain became the first vet to carry out life-saving keyhole surgery on a reindeer.

Graham Bowland, CEO of Surgical Innovations, said: "I am delighted that once again our laparoscopic instruments have helped Romain in his operative techniques on the animals at Edinburgh Zoo. Such operations help promote the zoo as a pioneering centre for wildlife minimally invasive surgery and firmly establish keyhole surgery as a viable proposition for animals of all sizes."