

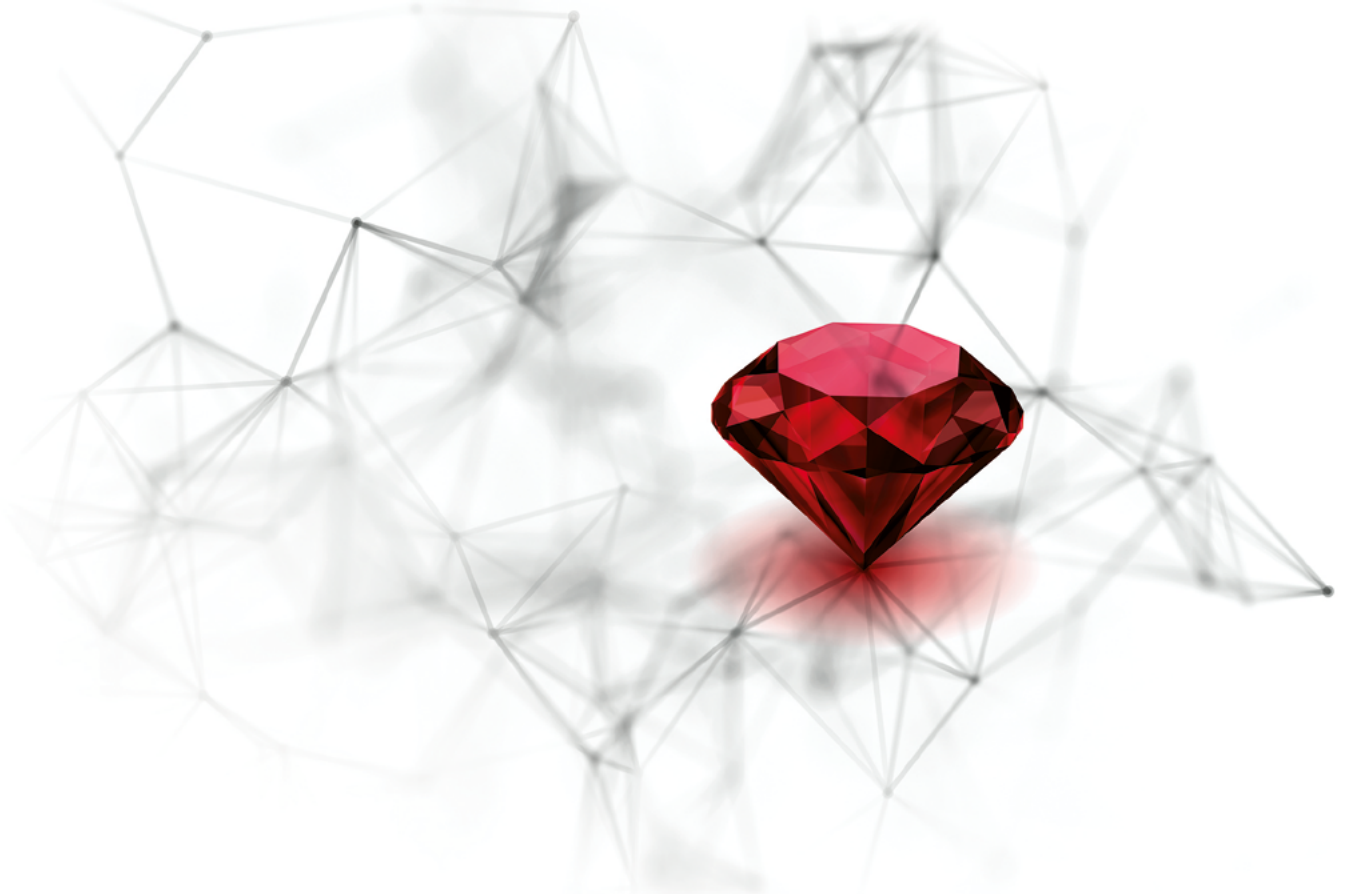
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Experiences with the new  
KARL STORZ IMAGE1 S™ RUBINA™  
ICG platform in visceral surgery.  
See better – treat better



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# Experiences with the new KARL STORZ IMAGE1 S™ RUBINA™ ICG platform in visceral surgery. See better – treat better

An exact depiction of anatomical and pathological structures is one of the most elementary prerequisites for performing visceral surgery. Minimally invasive procedures can only be safely performed under optimal visualization. In recent decades, visualization has been continuously enhanced thanks to technical advancements, especially with regard to image resolution (4K and 3D), telescopes, monitors and light sources. Images transmitted from the abdominal cavity display the site as realistically as possibly in a natural color rendition.

## Near-infrared fluorescence offers the possibility of an earlier and more differentiated identification of intraoperative structures

The necessary indocyanine green (ICG) dye, which has been approved for intravenous administration, is distributed through the bloodstream and excreted via bile. This makes both fluorescence angiography and fluorescence cholangiography possible. In addition to ICG, technical requirements include a special telescope and a special light source.

**Technology:** The new IMAGE1 S™ RUBINA™ imaging technology offers the combination of 3D and 4K visualization together with ICG fluorescence with one telescope. Depending on the user's indications, ICG fluorescence can be displayed in various modes:

- ⌚ Overlay: White light is combined with an ICG overlay image
- ⌚ Fluorescence in green or blue according to individual preferences and applications
- ⌚ Intensity Map: Signal intensity displayed in the overlay image
- ⌚ Monochromatic: Fluorescence displayed in white on a black background for the best possible differentiation

Having used the technology ourselves since the beginning of 2021, we have become impressed with the very good image quality in white light and other ICG modes. A very interesting feature

is the possible rotation of the TIPCAM®1 RUBINA™ videoendoscope with automatic horizon alignment – another factor that contributes to enhanced image quality.

**Application:** In visceral surgery, ICG fluorescence is primarily used to display perfusion throughout the entire gastrointestinal tract and to visualize the extrahepatic bile ducts. Rapid perfusion assessment is particularly important in the case of anastomosis while a quick and safe identification of the bile ducts can protect against misjudgments and injuries. Further indications are, for example, the visualization of carcinomas, metastases and the lymph system.

**Conclusion:** The new IMAGE1 S™ RUBINA™ imaging technology combines optimal image quality with the option of intraoperative ICG fluorescence. Various studies have demonstrated significant clinical benefits in terms of lower complication rates and shorter surgery times. We routinely use this technique in all laparoscopic cholecystectomies and all gastrointestinal resections/anastomoses. See better – treat better holds true as far as the best possible treatment quality is concerned.

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KARL STORZ TIPCAM®1 RUBINA™ 4K-3D NIR/ICG Videoendoscope