

Fluorescence Imaging in Cholecystectomy

with IMAGE1 S™ Rubina™

STORZ
KARL STORZ—ENDOSKOPE

SURGICAL APPLICATION BRIEF

Problem

Anatomical
Variants



PREVALENCE
19%
OF PATIENTS¹

Problem & Challenge with Anatomical Variation

Bile duct injury (BDI) most often results from misperception of the anatomy of the biliary tree around the gallbladder—not from lack of surgical skill.² Anatomical variation may make it harder to correctly identify bile ducts.

0.22%
BDI incidence rate¹

7.2%
MORTALITY RATE¹
year after BDI¹

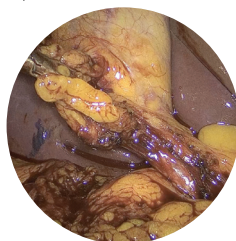
\$ Financial Impact



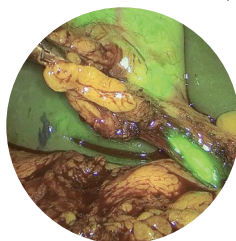
2X

Higher Average Cost Than For Patients With No BDI¹

USE OF NIR/ICG



White
Light



Rubina™
Green Overlay

ICG improves identification of biliary structures by a **FACTOR OF 3** before and after dissection³

Conversion Rates Down **2.55% ➔ 0.32%**⁴

Optimized Outcome

NIR/ICG Offers Tangible Benefits for Patients

ICG cholangiography can increase the surgeon's ability to accurately identify the bile ducts and avoid the error of misperception, which can potentially reduce the incidence of BDI. Additionally, ICG cholangiography can help in the recognition of aberrant bile duct anatomy, which further reduces the risk of BDI.

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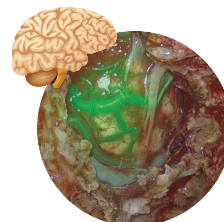
Common Rubina™ Applications

ICG Cholangiography

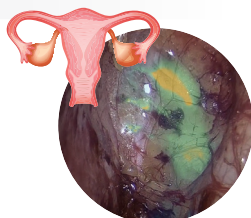
- Enhanced identification of biliary structures
- Reduced occurrence of bile duct injury
- Reduced conversion to open surgery
- Reduced costs



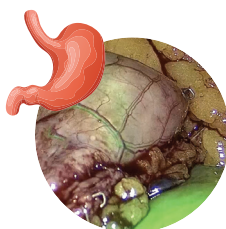
Visualization of Biliary Anatomy



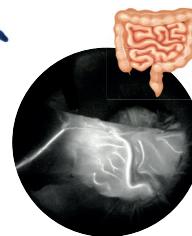
Visualization in Neurosurgery
Critical Structures and
Perfusion Assessment



Visualization of the
Sentinel Lymph Node



Upper GI Perfusion
Assessment



Colorectal Perfusion
Assessment



1. Fong Z et al. Diminished Survival in Patients with Bile Leak and Ductal Injury: Management Strategy and Outcomes, J Am Coll Surg. 226, 568–576. <https://doi.org/10.1016/j.jamcollsurg.2017.12.023>.
2. Way L et al. Causes and prevention of laparoscopic bile duct injuries: analysis of 252 cases from a human factors and cognitive psychology perspective, Ann Surg. 237, 460–469. <https://doi.org/10.1097/01.sla.0000060680.92690.e9>.
3. Dip F et al. Randomized Trial of Near-infrared Incisionless Fluorescent Cholangiography, Ann Surg. 270, 992–999. <https://doi.org/10.1097/sla.0000000000003178>.
4. Dip F et al. Does near-infrared fluorescent cholangiography with indocyanine green reduce bile duct injuries and conversions to open surgery during laparoscopic or robotic cholecystectomy?—A meta-analysis, Surgery 169, 859–867. <https://doi.org/10.1016/j.surg.2020.12.008>.

Please contact your KARL STORZ sales representative for detailed information

FOR U.S. USE ONLY

It is recommended to check the suitability of the product for the intended procedure prior to use.
Please note that the described products in this medium may not be available yet in all countries due to different regulatory requirements.

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