Scatter Radiation Protection in ERCP

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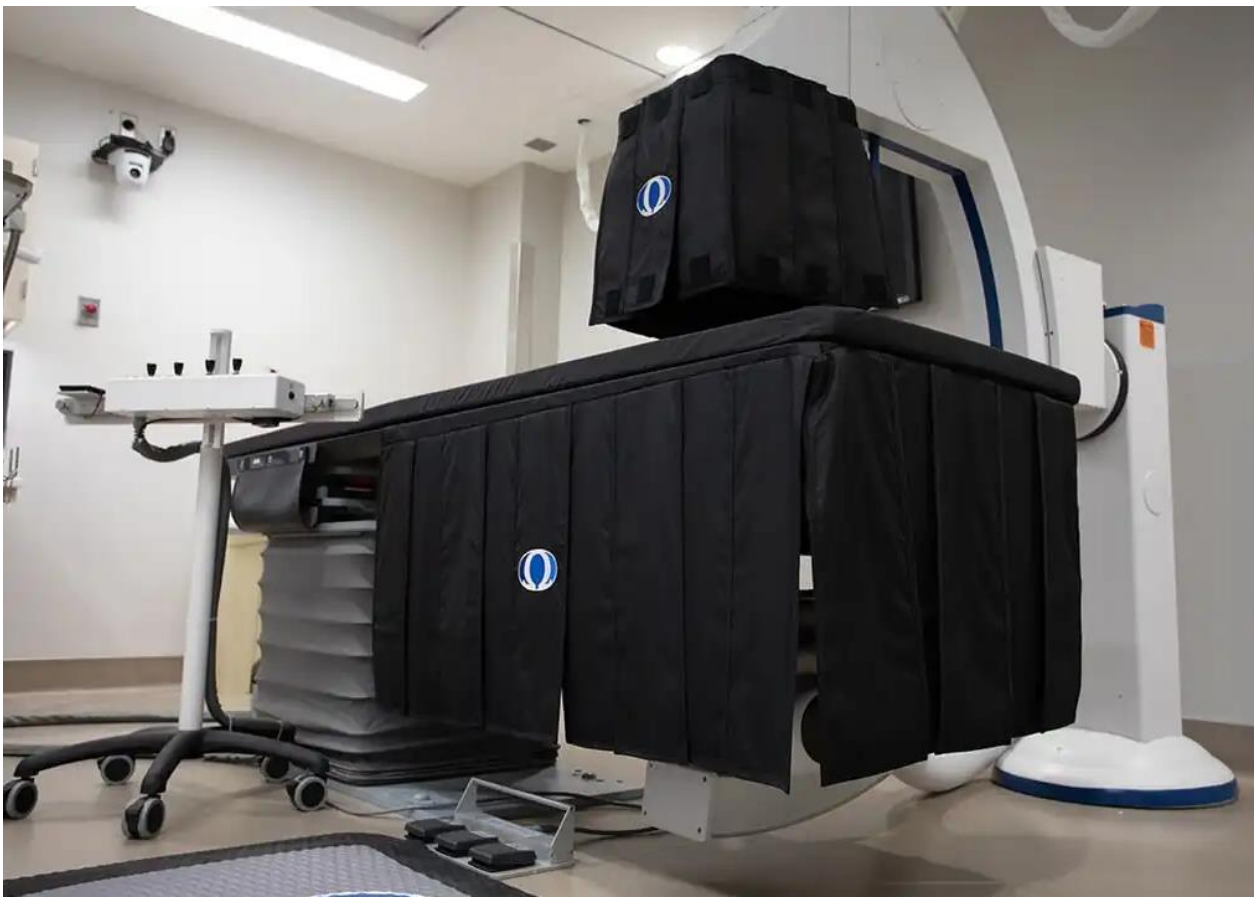

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With the increased use of ERCP to treat gastrointestinal tract diseases has come an increased risk of significant radiation exposure to interventional endoscopists and their staff. The IAEA reports that a major source of exposure to medical staff is radiation scattering as it contacts the patient. With the added risk of exposure comes the question – is there more protection available than that provided by protective clothing?

Omega has long recognized the benefits of lead shielding and incorporated the technology in their E-View system for interventional endoscopy. Omega's unique 360° lead shielding protection covers not only the flat panel image detector, but also provides protection below the table. The system also uses a motorized variable source-to-image distance (SID) that can be lowered towards the patient. The net effect of this combined technology reduces scatter radiation while enhancing image quality.

In a 2015 study, the Center for Interventional Endoscopy (CIE) at AdventHealth Orlando compared the fixed E-View system with its incorporated lead shielding to a mobile C-arm. The results of the CIE study were similar to the later study above. The radiation exposure was significantly lower with the E-View system, by up to ~81%, compared to a mobile C-arm.

In 2019, Omega took the idea of radiation safety to a new level with the introduction of FluoroShield™. This advanced AI-enabled technology creates a new modality in interventional imaging reducing dose by up to an additional ~84% – without changing existing workflow or sacrificing image quality. The resulting radiation safety improvements extend not only to physicians and staff, but to patients as well.

A 2020 study posted to the American Journal of Gastroenterology showed that the use of Artificial Intelligence significantly reduces radiation exposure to patients and scatter radiation to endoscopy personnel. Radiation scatter was ~59% less using the AI system compared to a conventional, non-AI, fluoroscopy system.

Is there more protection available than that provided by lead clothing? Clearly the answer is yes. Lead shielding incorporated into your interventional lab can make a marked impact in reducing scatter radiation. AI technology takes increased safety to another level and reduces radiation exposure to everyone in the lab – physicians, staff, and patients.

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