Radiographic, Fluoroscopic System

Health problem addressed

This technology is effective in arthrography, bronchography, gastrointestinal and biliary tree studies, hysterosalpingography, intravenous and retrograde pyelography, myelography, and sialography. Other applications include locating ingested foreign materials; localizing lesions for needle aspiration or biopsy; highlighting congenital anatomic abnormalities; diagnosing congestive heart failure; and evaluating chest pain.

Product description

These devices consist of a combination of a patient support unit (usually a table base and a movable tabletop), an under-table x-ray tube and holder, x-ray generators, a power-assisted spot-film device, an image intensifier, radiation shields, a Bucky film tray, an overhead x-ray tube and ceiling support for follow-up radiography, and a control panel.

Principles of operation

Most R/F systems allow spot filming of the image to produce an x-ray film for later detailed study by the radiologist and for film archiving. For routine radiography and follow-up x-ray scans after studies that use contrast media (e.g., gastrointestinal studies), most systems include an under-table Bucky tray for use with an overhead x-ray tube.

Operating steps

Patients are positioned on the x-ray table and a catheter inserted (procedure-dependent). The x-ray scanner will be used to produce fluoroscopic images. Depending on the procedure, a dye or contrast substance may be injected into the patient via an IV line in order to better visualize the organs or structures being studied. After the procedure is complete the IV line will be removed.

Reported problems

Typical problems include mechanical issues; unexpected failures of safety features; overexposure or unexpected exposure to radiation; breakage or weakening of mechanical supports; overheating in drive motors; table misalignments; inadequate radiation shielding; and noncompliance with regulatory codes.

Use and maintenance

User(s): Radiologic technician
Maintenance: Medical staff; technician; biomedical or clinical engineer
Training: Initial training by manufacturer and manuals

Environment of use

Settings of use: Hospitals; private practices; clinics; stand-alone imaging centers
Requirements: Radiation shielding (room, mobile, or overhead); stable power source

Product specifications

Approx. dimensions (mm): Configurable
Approx. weight (kg): Configurable
Consumables: NA
Price range (USD): 415,000 - 1,150,000
Typical product life time (years): 10
Shelf life (consumables): NA

Types and variations

Over- or under-table x-ray tube; C-arm; remote control; direct control