VOORJAARSDAGEN
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PROGRAMME AND
SCIENTIFIC PROCEEDINGS
Ideally plain radiographs are taken in two orthogonal views of the region of main interest. The patient should be presented with an empty colon and after fasting 12 hours. This minimizes superimposition of faeces and ingesta and is a precondition for contrast studies, too. Although sonography is a very valuable tool in diagnosing especially urogenital tract disorders contrast studies provide extra information of the function of various organs (for example peristalsis of GIT or kidney perfusion).

Contrast studies that are helpful for detecting congenital GIT disorders:
- plain radiographs should always proceed contrast studies to get an overview of the abdomen and to find the correct exposure dates; when using positive contrast media exposure factors should than be increased and decreased when using negative contrast media (air).
- only small amounts of barium sulphate may be used for evaluating the location of the esophagus or stomach
- 7-12 ml/kg 30% w/v barium sulphate will be used for evaluation of the stomach size, shape and contractility as well as the intestines
- large volumes of food mixed with contrast media will demonstrate the solid phase of gastric emptying

Contrast studies of the urinary tract:
- intravenous urography or excretion urography or pyelocystography: important to check blood urea nitrogen and creatinine levels as well as hydration status before the study: there may be no opacification of the upper urinary tract in severe renal compromise. Start with plain radiographs to check exposure dates, ensure that the colon is empty. Use iodinated contrast media: bolus injection of 800-850 mgI/kg BW intravenously; always perform VD and LL views! Repeat radiographs immediately after i.v. injection (angiogram and nephrogram phase of kidneys visible), after 2-5 minutes (pyelogram phase) and after 10-15 minutes, if necessary. Fluoroscopy may be advantageous for diagnosing disorders.
- positive contrast cystography: opacification of the urinary bladder followed excretion urography or retrograd application of iodinated contrast medium.

Congenital disorders of the gastrointestinal tract:
- congenital anodontia (absence of teeth) or oligodontia (reduction in number of teeth); the latter is common in brachycephalic breeds; sometimes polyodontia
- brachycephalic obstructive syndrome: thickening of the soft palate, caudal displacement of the larynx
- cricopharyngeal achalasia: incoordination between cricopharyngeus muscle and the rest of the swallowing reflex, which produces obstruction at the cricopharyngeal sphincter during swallowing; diagnosis requires ideally fluoroscopy while the patient is swallowing barium sulfate paste
- congenital megaesophagus: hereditary in Wirehaired Fox Terriers and Miniature Schnauzers, familial predisposition in German Shepherd dogs, Great Danes, New foundlands, Shar-Pei; vascular ring anomaly, hereditary myopathy or giant axonal neuropathy possible; on radiographs the esophagus is usually airfilled and the heart is compressed ventrally. On DV views two soft tissue dense lines that represent the esophagus walls converge at the diaphragm. Aspiration pneumonia may show up as alveolar lung patterns.
- megaesophagus in cats caused by feline dysautonomia or Key-Gaskell-syndrome
- situs inversus: all or some organs may be positioned contralaterally (very rare)
• diaphragmatic hernia: parts of the GIT may enter the pleural cavity.
• PPDH (peritoneopericardial diaphragmatic hernia): cranial displacement of the stomach into the pericard; position of the stomach may be checked with contrast studies or sonography
• sliding hiatal hernia (hiatal hernia typ I): the gastroesophageal sphincter and also the cardia slide through the hiatus to cranial. This is often a dynamic event in younger animals without invagination of these organs. Shar-Peis.
• gastroesophageal intussusception: the stomach and sometimes the spleen, duodenum, pancreas and/or omentum invaginate through the hiatus into the caudal esophagus. Male German Shepherd dog predisposed, high mortality rate; contrast medium will not enter the stomach, within the dilated esophagus a large luminal filling defect, often with rugal folds, will be seen
• paraesophageal hiatal hernia: the cardia and sometimes fundus of the stomach herniate through the hiatus adjacent to the esophagus into the thorax. The gastroesophageal sphincter is in normal position.
• abnormally short colon: developmental anomaly which may predispose to soft, unformed faeces
• idiopathic megacolon in cats: muscular dysfunction causes severe dilatation of the lumen; cause unclear but may be connected with Key-Gaskell-syndrome; also found in Manx cats with spinal anomalies
• atresia ani or coli: large intestinal dilation

Congenital disorders of the liver:
Shunts: in general only seen with contrast studies like portal venography or splenoportography; the liver (small) and kidney (enlarged) size or visible urinary calculi may give a consideration for the final diagnoses on plain radiographs.
• intrahepatic portosystemic shunt - patent ductus venosus: larger breeds
• extrahepatic portosystemic shunt: smaller breeds, most common shunt
• portoazygos shunt

Congenital disorders of the urogenital tract:
• unilateral renal agenesis
• congenital portosystemic shunts: often bilateral kidney-enlargement, urinary tract concrements possible
• polycystic kidney disease: in long-haired cats, mostly Persians, also Cairn Terrier, WHW Terrier; mostly bilaterally: enlarged kidneys, often irregular surface; better seen in sonography
• kidney dysplasia or kidney hypoplasia: Cocker Spaniel, Lhasa Apso, Shitzu, Doberman, Schapendoes predisposed; small kidneys, sometimes with irregular surface; is accompanied with demineralisation of the skeleton (secondary hyperparathyreoidism)
• hereditary cystadenocarcinoma: older German Shepherd dogs: enlarged kidneys with irregular outline; poorly defined areas of non-opacification in a nephrogram
• ectopic ureter: intravenous urography necessary for demonstration; due to stenosis at the ending often dilated, the ectopic ureter may enter the urethra, vagina or rectum; small urinary bladder if bilaterally; females predisposed, Golden Retriever predisposed
• congenital urinary bladder diverticula: malformation of shape
• patent urachus, congenital urachal diverticulum: better visualised with contrast media; often beak-like formation at the cranioventral pole of the bladder
• hermaphroditism: rudiments of the penile bone may be visible near the vulva

Further Reading: