II JAI SRI GURUDEV II

imaging the world

ADICHUNCHANAGIRI INSTITUTE OF MEDICAL SCIENCES

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Principal, AIMS

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Editorial Greetings from the Department of Radiology,

*With the blessings of Paramapujya, , Jagadguru, Sri Sri Sri Dr Balagangadharanatha Mahaswamiji & His holiness jagadguru Sri Sri Sri Nirmalanandanatha Mahaswamiji and under the able guidance of our beloved Principal Dr MG Shivaramu , we shall take great pleasure to introduce **"IMAGING THE WORLD"** , the quarterly newsletter from our department.*

At the outset, we wish express our sincere thanks to our Principal Dr MG Shivaramu for bringing forth the novel concept of newsletter in our institution.

***IMAGING THE WORLD** , is presented by the Department of Radiology , the branch that has an amazing ability to visualize the body without a scalpel!! . Radiology is now the key diagnostic tool for many diseases and has important role in monitoring and predicting the outcome. Radiologist have become clinical specialists, who have been obliged to also become experts in image capture technology.*

Our Department is equipped with dynamic faculty members who are actively involved in both diagnostic workup and academic activities. In this edition we present to you few interesting cases that we came across , ongoing research projects, upcoming events which will enlighten our dear fellow colleagues and postgraduates in the all the department in their academic venture. The newsletter will be published on a quarterly basis.

We are open for your valuable comments and suggestions. You may contact us at aimsradiology@gmail.com.

INTERESTING CASE FROM OUR CT CONSOLE ROOM

Choledochal cyst diagnosed by computed tomography

Choledochal cysts represent congenital cystic dilatations of the biliary tree. Diagnosis relies on the exclusion of other conditions (e.g. tumour, gallstone, inflammation) as a cause of biliary duct dilatation. Although they may be discovered at any age, 60% are diagnosed before the age of 10 years with a strong female predilection

Clinical history:

35 year old woman with long-standing right upper quadrant pain presenting with jaundice and recent general deterioration.

USG:

On Ultrasound there is a dilated cystic lesion which communicates with the bile duct and is separate from the gall bladder. No other associated pathologies made out

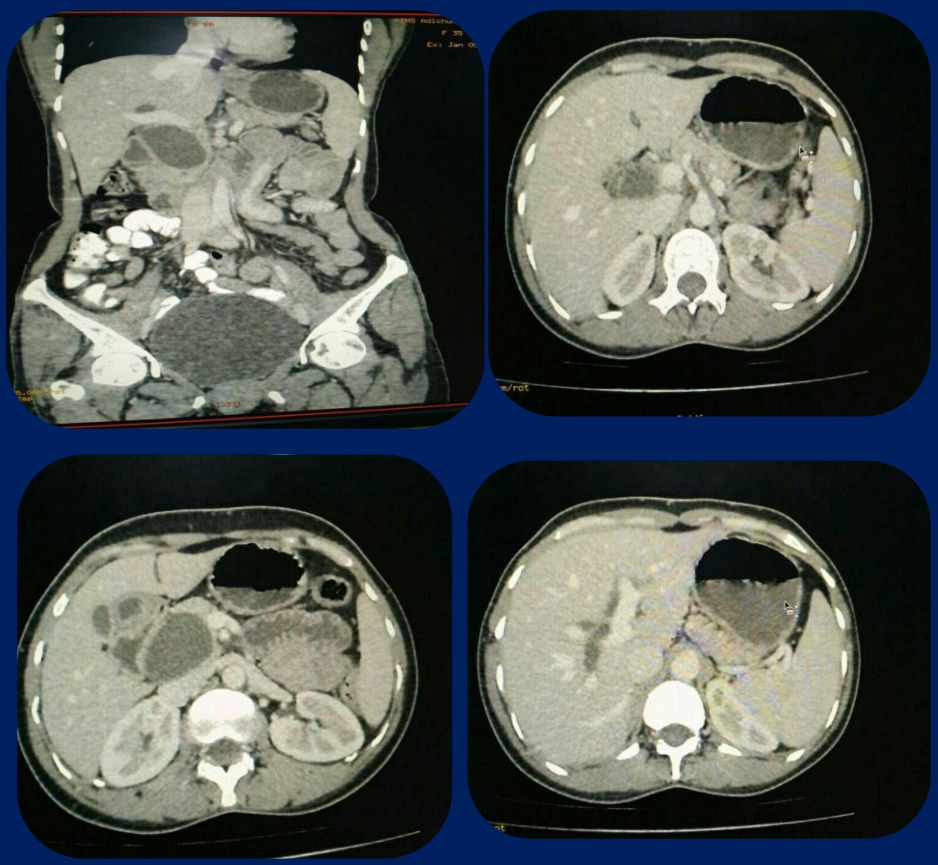
Cect abdomen:

There is evidence of fusiform cystic dilation of entire etrahepatic CBD with no evidence of distal obstructive mass lesion/calculus. There is associated proximal IHBR dilation. Diagnosis of type I choledochal cyst was made out.

Percutaneous transhepatic cholangiography (PTC) and endoscopic retrograde cholangiopancreatography (ERCP) are used to supplement the above noninvasive imaging studies when those studies fail to sufficiently delineate the relevant anatomy.

Discussion:

Choledochal cyst is a rare congenital malformation with a female-to-male ratio of 3:1. It is much more common in the Orient. Formation of a choledochal cyst is thought to be related to reflux of pancreatic secretions into the bile duct as a consequence of an anomalous junction of the common bile duct and pancreatic duct, the so-called long common channel The diagnosis is typically made in the childhood due to the presence of one or more symptoms of the classical triad of obstructive jaundice, right upper quadrant pain, and a palpable mass. Todani's classification of choledochal cysts comprises five types of cysts: saccular or fusiform dilatation of the extrahepatic duct (type 1), diverticulum of the extrahepatic duct (type II), choledochocele (type III), multiple cysts or involvement of both the intraand the extrahepatic ducts (type IV), and intrahepatic bile duct cysts only (type V or Caroli disease). Choledochal cyst not infrequently causes malignant change in the epithelial



Postcontrast coronal & axial computed tomography sections of the abdomen show a type 1 choledochal cyst

The treatment of choice for choledochal cysts is complete excision with construction of a biliary-enteric anastomosis to restore continuity with the gastrointestinal tract. Treatment of choice for type I choledochal cyst is complete excision of the involved portion of the extrahepatic bile duct; a Roux-en-Y hepaticojejunostomy is performed to restore biliary-enteric continuity

INTERESTING CASE FROM OUR CT CONSOLE ROOM

GIANT CAVERNOUS MALFORMATION - BRAIN

Clinical History :

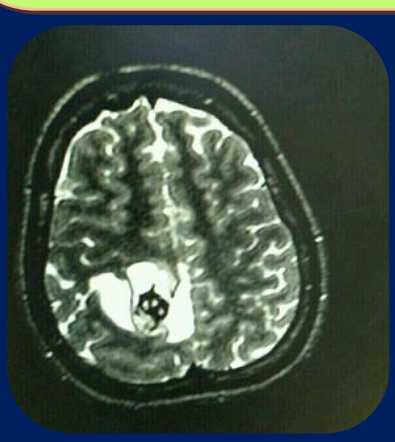
A 17 year old male patient presenting with headache, seizures, and focal neurologic deficits referred for MRI brain.

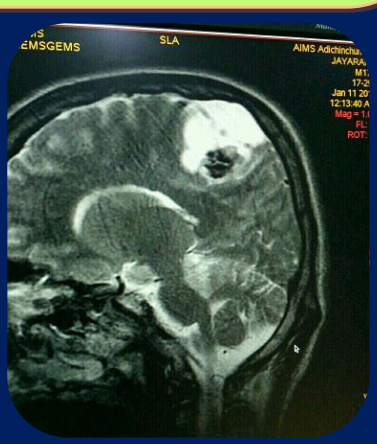
MRI BRAIN:

A large well defined T1/FLAIR hypo ,T2 hyperintense cystic lesion with internal septations seen involving cortical and white matter region of the right high parietal lobe with evidence of T1/T2 heterogenous intensity solid component showing blooming on GRE sequences diagnosed as Giant cystic cavernous malformation

Discussion:

Cavernous malformations are vascular lesions composed of thinwalled, dilated capillary spaces with no intervening brain tissue. Cavernomas of the brain parenchyma appear to be different entities from cavernomas of the extra-axial compartment around the brain. Intra-axial cavernomas are typically angiographically silent, “grow” only through intralesional hemorrhage , and are usually inherited through mutations of defi ned genes. Extra-axial cavernomas are usually hypervascular lesions with a potential for tumor growth and do not appear to be heritable genetic lesions.





Solitary cavernoma of the right high parietal lobe in axial and sagittal MR sequences.

Cavernomas consist of a compact mass of sinusoidal vessels lying adjacent to each other with no intervening functional cerebral parenchyma. They vary from a few millimeters to several centimeters. On gross pathology, cavernomas appear as dark red, multilobular, nonencapsulated masses that are well circumscribed by the cerebral parenchyma. The lesion is often surrounded by reactive gliosis and hemosiderin deposits from minor, clinically silent hemorrhages . Larger lesions may show areas of thrombosis with subsequent organization. Calcifi cations are found in a few cases. With recent hemorrhage, the cavernoma may be partially obliterated and lie at the periphery of the hematoma.

Treatment:

Asymptomatic cavernomas are not treated. Surgical resection becomes indicated when lesions rebleed frequently or cause intractable seizures. Location of a cavernoma within the vicinity of a DVA may complicate the surgical access, since the venous anomaly must be left untouched. Convexity cavernomas are usually located in the glial tissue, facilitating the surgical approach.

A little bit of history.....

“INTERVENTIONAL RADIOLOGY ”- ANGIOGRAPHY

- **HISTORY:** The first angiogram was performed only months after Roentegens discovery of X rays.
- Two physicians injected mercury salts into an amputated hand and created an image of the arteries.
- Interventional radiological procedure began in 1930s with angiography.
- In early 1960s Mason Jones pioneered transbrachial selective coronary angiography.
- Later in 1960s transfemoral angiography was developed.
- Today interventional radiology is a sub speciality which provides minimally invasive techniques with the help of imaging modalities to diagnose or treat a condition, with advantages of minimally invasive, local anesthesia and early recovery .
- Now it is employed in stent placement, embolization, thrombolysis, balloon angioplasty, atherectomy, electrophysiology.

Post mortem injection of mercury salts in Jan, 1896

Sven-Ivar Seldinger,

The world-renowned Swedish pioneer in angiography, was a radiologist from Mora Municipality, Sweden. In 1953, he introduced the Seldinger technique to obtain safe access to blood vessels and other hollow organs which impacted the development of angiography, and consequently the realisation of ***interventional radiology***, as Seldinger's method of introducing catheters percutaneously into vascular channels.

“IMAGING THE WORLD, SERVING THE HUMANITY”