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DECEMBRE 2010

NEURORADIOLOGY
MUHC–MNH

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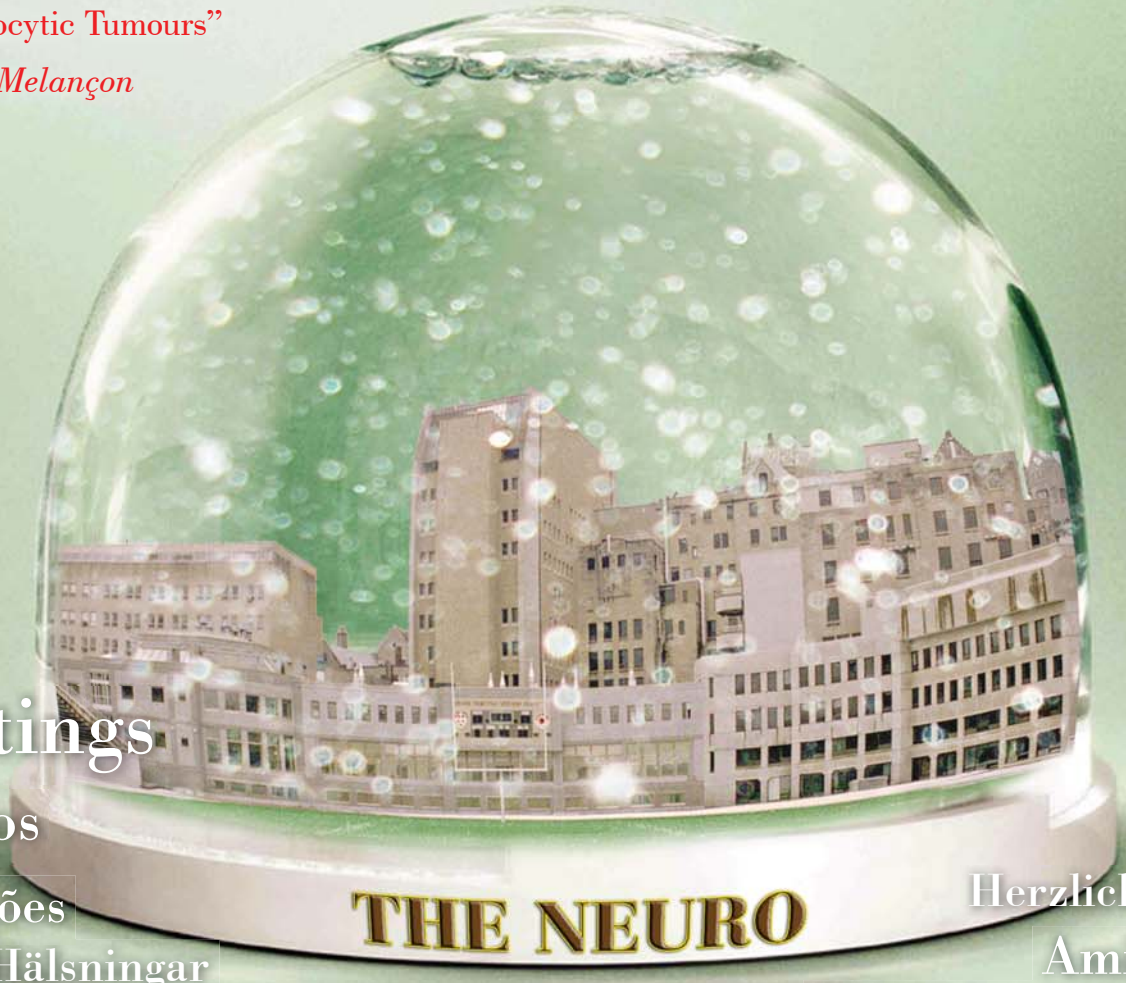
WISHING YOU & YOURS a Happy and Prosperous 2011

IN THIS ISSUE …



Greetings

Respetos

Saudações

Bäst Hälsningar

敬意

Alsalam alaykum

Saluti affettuosi

Cordialmente

Amicalement

Herzliche Gruesse

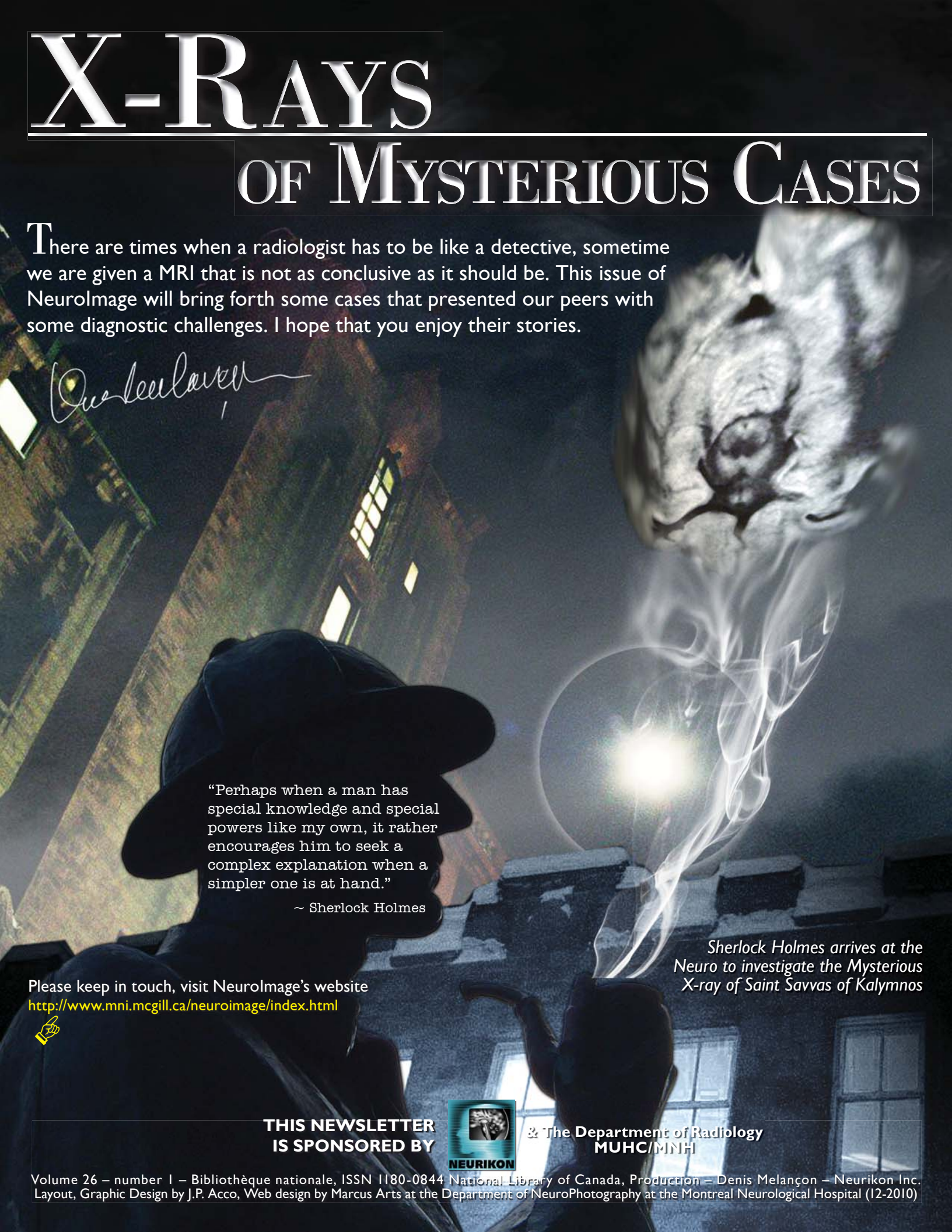
O Genki De

Namaste

此致

X-Rays of Mysterious Cases

There are times when a radiologist has to be like a detective, sometime we are given a MRI that is not as conclusive as it should be. This issue of NeuroImage will bring forth some cases that presented our peers with some diagnostic challenges. I hope that you enjoy their stories.



"Perhaps when a man has special knowledge and special powers like my own, it rather encourages him to seek a complex explanation when a simpler one is at hand."

~ Sherlock Holmes

Sherlock Holmes arrives at the Neuro to investigate the Mysterious X-ray of Saint Savvas of Kalymnos

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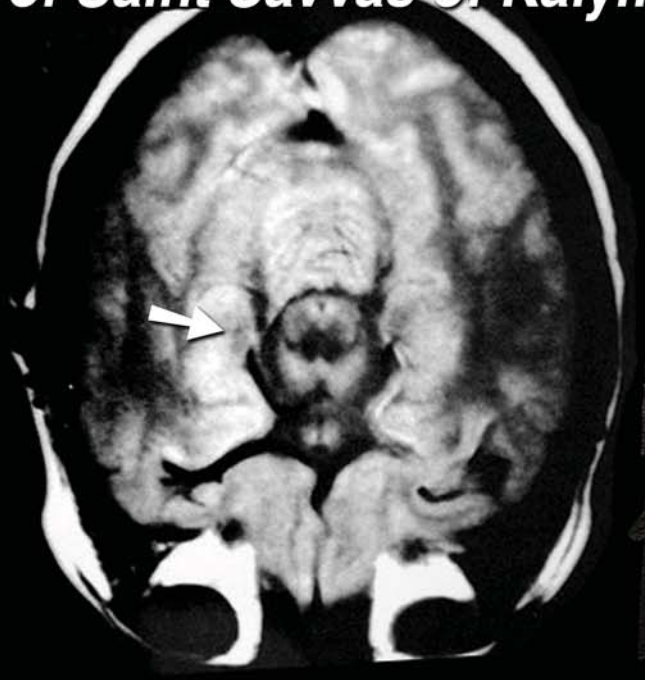
ALL NEW!
•SHOCKING!
•BIZARRE!
•INCREDIBLE!

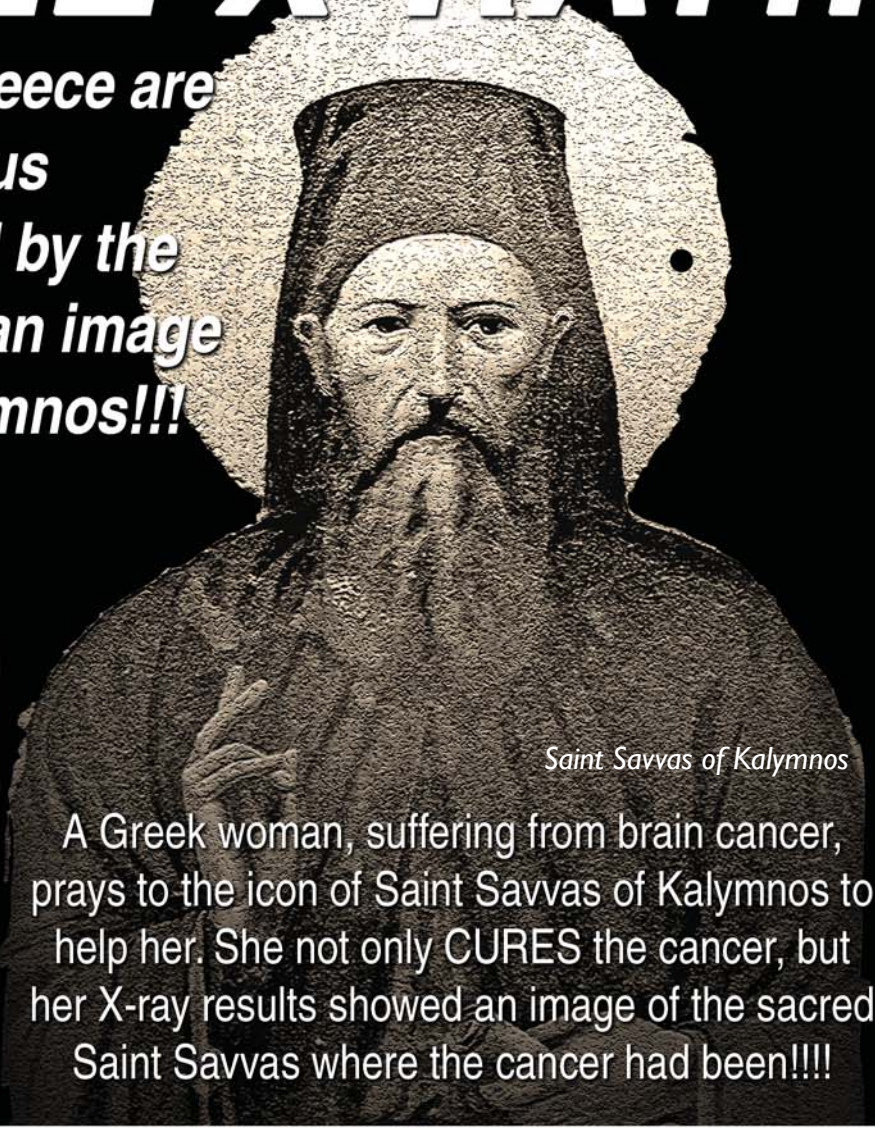
WEEKLY WORLD® NEWS

THE WORLDS ONLY RELIABLE NEWSPAPER

MIRACLE X-RAY!!

Neuroradiologists in Greece are happy for this miraculous recovery but are baffled by the X-ray below which has an image of Saint Savvas of Kalymnos!!!





Saint Savvas of Kalymnos

A Greek woman, suffering from brain cancer, prays to the icon of Saint Savvas of Kalymnos to help her. She not only CURES the cancer, but her X-ray results showed an image of the sacred Saint Savvas where the cancer had been!!!!

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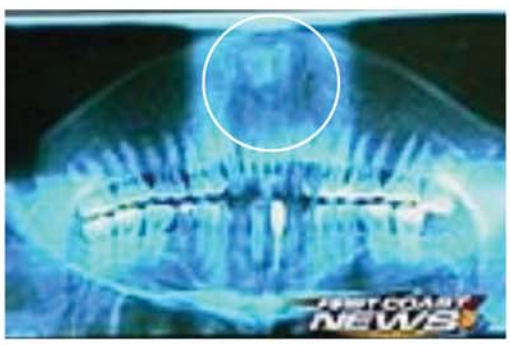


EVEN MORE *MIRACLES!!*

an image of JESUS ***is found a dental X-Ray?!?***

The patient now has a beautiful smile!

Endoderm in Ectoderm: a rare developmental CNS disorder

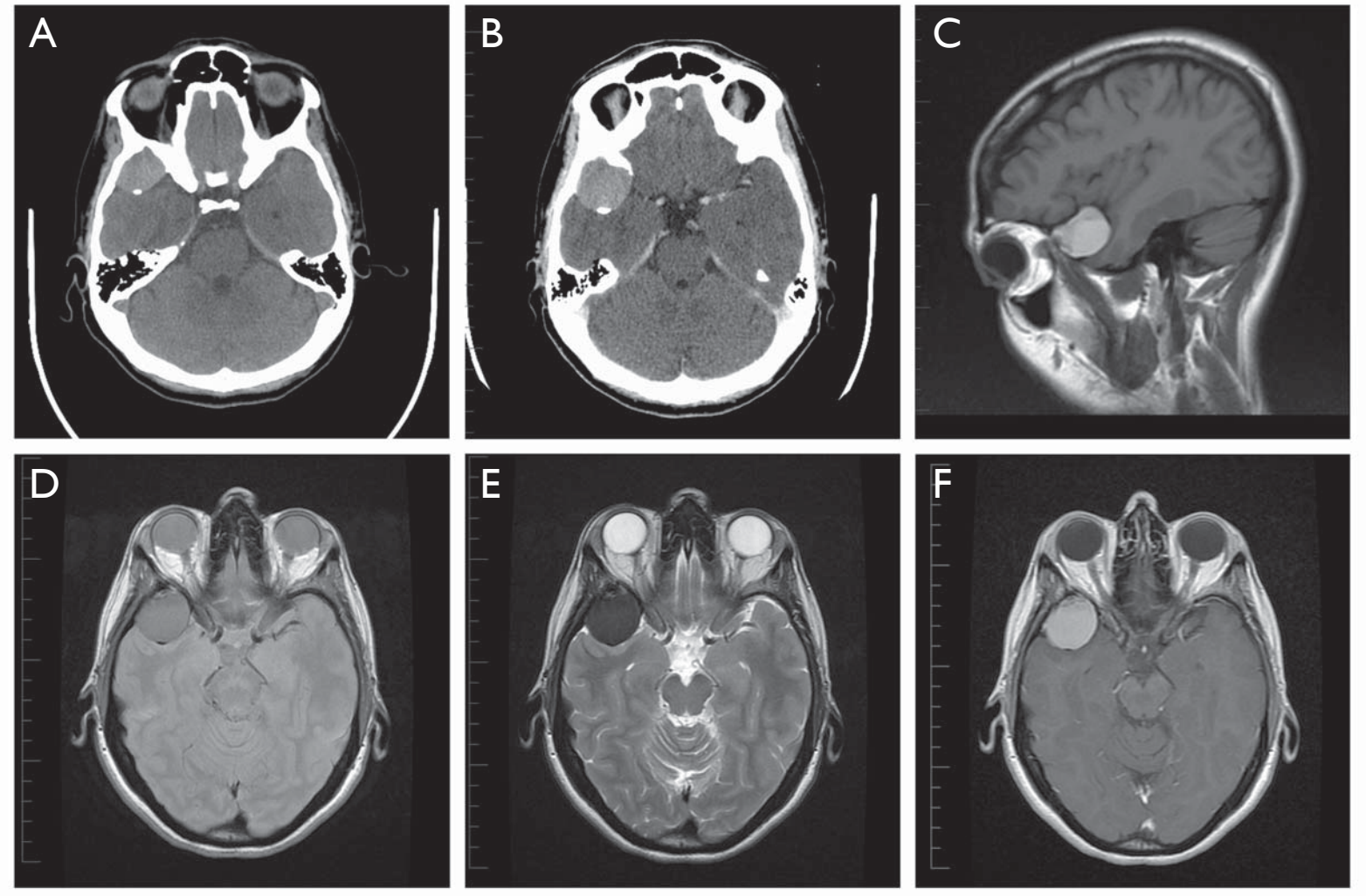
Kevin Petrecca, Denis Melancon, Marie-Christine Guiot

During embryonal development, the notochord extends rostrally to reach the prechordal plate. This is followed by a hollowing of the notochord to form the notochordal canal, which then fuses to the underlying endoderm. This fusion results in a transient structure, the neurenteric canal, which connects the yolk sac (adjacent to endoderm) and the amniotic cavity (adjacent to ectoderm).

Rarely, an endodermal cell will migrate from its ventral position, through this transient neurenteric canal, to lodge in the dorsal ectoderm. If the final destination of this misplaced endodermal cell is rostral and lateral to the prechordal plate the cell can differentiate into an off-midline supratentorial

neurenteric cyst. Twenty three such cases have been previously reported. (*) We report here the twenty fourth, a 44 year old woman with an incidentally discovered right middle fossa lesion. This lesion had grown over a 5 year imaging interval. It was resected and determined to be a neurenteric cyst.

MRI signals of images below are closer to those of a colloid cyst than the classical neurenteric cyst.



(A) CT Scan Plain (B) CT Scan with contrast (C) Sagittal MRI T1 (D) Axial MRI PD (E) Axial MRI T2 (F) Axial MRI T1 Gado

(*) Mittal S, Petrecca K, Sabbagh AJ, Rayes M, Melançon D, Guiot MC, Olivier A. Supratentorial neurenteric cysts-A fascinating entity of uncertain embryopathogenesis. Clin Neurol Neurosurg. 2010 Feb;112(2):89-97.

Intracranial Diffuse Melanocytosis and Melanomatosis Presenting with Hydrocephalus and Subarachnoid Hemorrhage

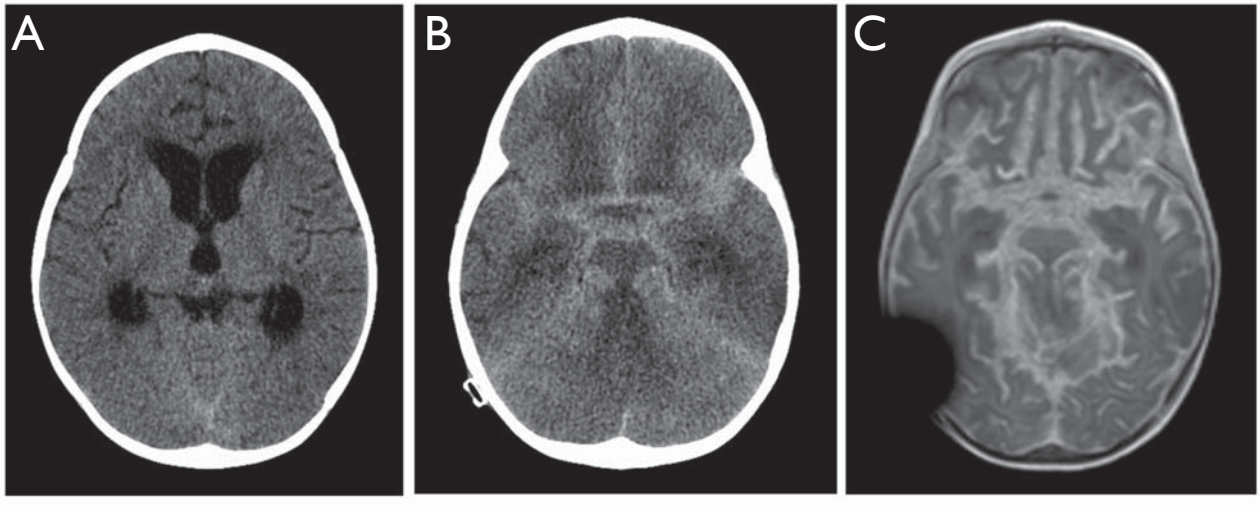
Ahmed Al Jishi and Jean-Pierre Farmer

A 14 months old boy presented to the hospital with repeated vomiting for two weeks. It was thought initially to be viral gastritis. However, due to the fact that he was having slightly motor developmental delay and persistent vomiting, a CT scan wad obtained which showed communicating hydrocephalus (Fig 1). There was no history of falls, meningitis or previous intracranial hemorrhage to explain the unusually presenting hydrocephalus. A ventriculoperitoneal shunt (VPS) was inserted using a programmable valve. Intraoperatively, the opening pressure (OP) exceeded 40 cmH_2O. The patient improved and was discharged home in a good condition.

As we kept a close follow on him, we suspected a gastroesophageal reflux due to persistent postprandial vomiting. Otherwise, his neurological exam was stable as compared to preoperative baseline. Unfortunately, he presented to the hospital after 4 weeks with lethargy, dehydration and severe ataxia. His CT scan demonstrated diffuse hyperdense subarachnoid space, mimicking subarachnoid hemorrhage (SAH), with cerebral edema and slit ventricles (Fig 2). He was admitted to the ICU and MRI/MRA was done for him the next day to rule out any vascular abnormality. The MRI surprisingly showed thick and diffuse leptomeningeal enhancement (Fig 3). Our differential diagnosis was between brain abscess vs. carcinomatous meningitis. His initial VPS tapping showed clear CSF with RBC 773 cell/ul and WBC 10 cell/ul. In addition, a few atypical cells were suspicious for underlying malignancy.

On that night he deteriorated neurologically and had to be intubated. The repeated CT scan showed increasing cerebral edema. Hence, we inserted an external ventricular drain (EVD) and the OP was 30 mmHg. The diffuse melanocytic infiltration that was seen in the CSF lead to diagnose him with malignant melanoma with unrecognized primary. However, the absence of neurocutaneous and ocular melanotic lesions labeled him with primary melanoma. Further treatment with chemotherapy or radiation therapy was trivial because of rapid clinical deterioration. He passed away seven days after his admission.

Carcinomatous meningitis (CM) is a devastating clinical condition in cancer patients. Secondary metastasis is the most common source. CM is diagnosed in 1 -2 % of patients with primary brain tumors (Chamberlain et al, 1997). Primary melanocytic neoplasms of the CNS arise from leptomeningeal melanocytes. They can be diffuse or circumscribed, benign or malignant. Three distinct patterns are described: diffuse leptomeningeal melanocytosis (DLM) and melanomatosis, melanocytoma and malignant melanoma. DLM represents a rare subgroup of melanocytic neoplasms. (WHO, 2007), that is strongly linked to neurocutaneous melanosis, a rare phakomatosis before the age of two. The clinical symptoms begin usually with insufficient CSF absorption which results in hydrocephalus. In the other hand, melanocytoma and malignant melanoma present with compression-related symptoms based on their location. In DLM, once malignant transformation occurs, the malignant cells invade CNS parenchyma (melanomatosis) resulting in lethargy, vomiting, cranial nerve palsies, cerebellar dysfunction, intracranial hemorrhage, hydrocephalus, seizure, coma and death (Offiah et al, 2006, Liubinas SV et al, 2010). The prognosis is poor especially in late diagnosis. Intrathecal chemotherapy and radiation might be useful as palliative treatment if the condition is discovered in early stage of the disease.



(A) CT head with hydrocephalus.

(B) Head CT with suggested diffuse SAH.

(C) Diffuse leptomeningeal enhancement post gadolinium infusion.

Central Nervous System Melanoma

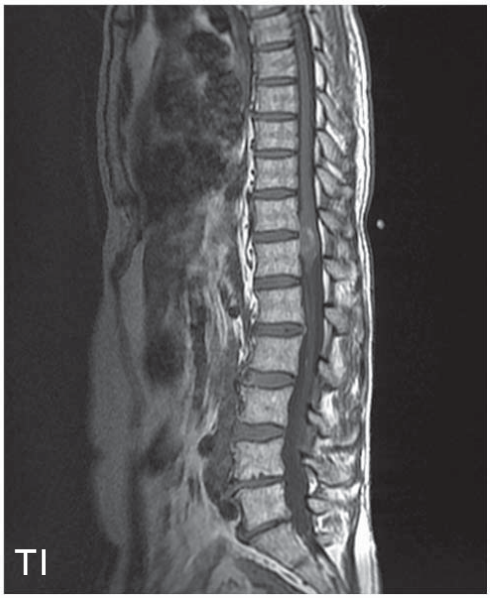
Denis Melançon

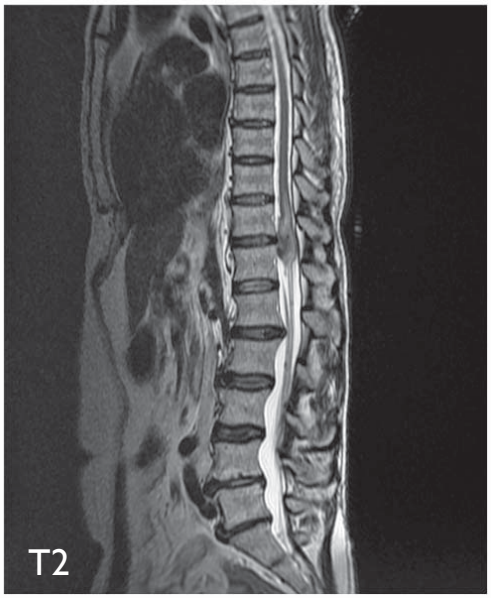
Melanoma is a malignancy of melanocytes, which are pigment-producing cells derived from the neural crest. The primary tumour may occur at any location on the skin or, less commonly, on mucous membranes or other locations. Their presence in the CNS usually results from metastasis. Melanomas primarily in CNS are very rare and arise from the leptomeninges or dura mater. Pathologically, they are usually referred to as meningeal melanocytomas..

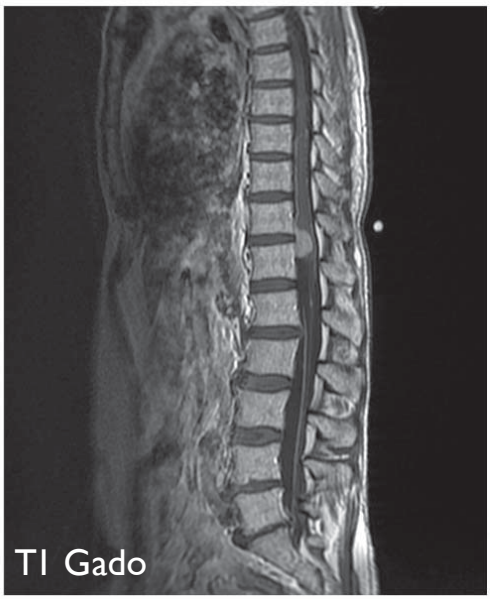
In reviewing our radiological data, we came across 8 cases of this entity, over the past 15 years. 5 were spinal, and 3 intracranial. Of the 5 intraspinal, 2 were cervical, 2 at the conus and 1 at T9; they appeared to be intradural but stuck to the spinal cord, one with definite invasion into the cord. Of the 3 intracranial, one was parietal, dural and subdural, one was left cerebello-pontine cistern. The 3rd one, in the occipital lobe, seemed to originate at the ventricular wall: no primary was found elsewhere.

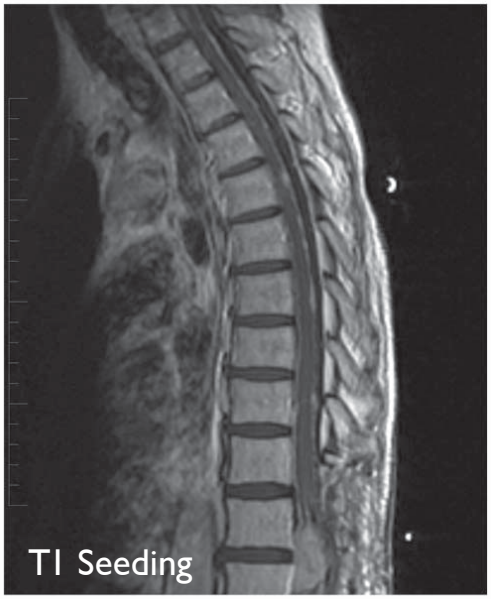
The gender differential was 2 males, 6 females.
Age of the females, 54 to 77.
Age of the 2 males, 19 and 62.
Below are a few pictures that illustrate this entity. All spinal leseions presented rapid seeding along neural axis. The parietal dural one rapidly invaded the brain.

Patient 1

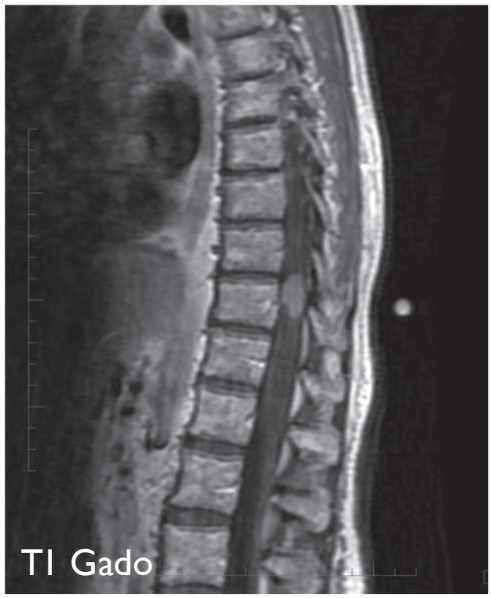


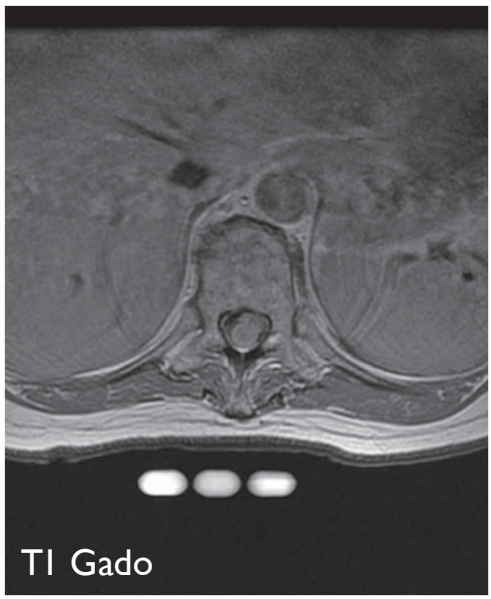






Patient 2





The 2nd Annual Denis Melançon Lecture

Guest Lecturer
Dr. Gordon Francis


Drs. Tampieri, Lapierre, Francis, Melançon, and Cortez


Dr. Feindel & Dr. Richardson


Dr. Andermann & Dr. Melançon


Dr. Milette & Dr. Melançon


Dr. Olivier, Dr. Bertrand & Dr. Melançon


Drs Francis, Richardson & Guiot