20 **Coleman SA**, Cooper PD. Upper airway obstruction misdiagnosed as asthma. *Br J Hosp Med* 1989;**41**:184.
21 **Helmrich G**, Stubbs TM, Stoerker J. Fatal maternal laryngeal papillomatosis in pregnancy: a case report. *Am J Obstet Gynecol* 1992;**166**:524–5. [published erratum appears in *Am J Obstet Gynecol* 1992;**166**:1313.]
22 **Balazic J**, Masera A, Poljak M. Sudden death caused by laryngeal papillomatosis. *Acta Otolaryngol Suppl* 1997;**527**:111–13.

Haemorrhage into an arachnoid cyst: a serious complication of minor head trauma

K De, K Berry, S Denniston

Emerg Med J 2002;**19**:365–366

Arachnoid cysts are infra-arachnoidal cerebrospinal fluid collections that are usually asymptomatic. However, they can become acutely symptomatic because of haemorrhage and cyst enlargement, which may result from minor head trauma. The range of symptoms is wide and many are "soft" signs. Diagnosis is important as cysts causing mass effect require surgery. A case is reported of a child presenting with localised headaches after minor head trauma. Computed tomography demonstrated an arachnoid cyst with evidence of haemorrhage, which required surgical intervention. Other cases of arachnoid cyst presenting to our hospital or reported in the literature are reviewed with respect to presenting symptoms and signs. Localised headaches, behavioural or cognitive changes and ataxia are more commonly associated with this disorder than nausea, vomiting, visual disturbances or seizures. This range of symptomatology following minor head trauma may warrant computed tomography when other criteria for this investigation are not met.

Intracranial arachnoid cysts are relatively rare, comprising 1% of all intracranial mass lesions,[1] of which 75% occur in children. They are benign collections of cerebrospinal fluid that are usually primary developmental abnormalities. Most are asymptomatic and found incidentally, most commonly in the middle cranial fossa and more frequently on the left side, however they may become acutely symptomatic after minor head trauma. Cysts may rupture or intracystic vessels may bleed into the cyst cavity resulting in mass effect and onset of symptoms. This may be associated with a subdural haematoma. The diagnosis is usually apparent on computed tomography although a subacute haemorrhage may appear isodense with adjacent brain tissue and require magnetic resonance imaging.[2] The treatment for arachnoid cysts with intracystic haematoma is surgical decompression and marsupialisation of the cyst.[3]

CASE REPORT

A 2 year old previously healthy boy, with normal development, presented eight days after a minor head injury. He had fallen 5–6 feet from a climbing frame onto a wood chip floor but had seemed so well after the incident that no medical attention was sought.

However, his parents noticed a new and unusual pattern of behaviour: on running or jumping he would stop suddenly and hold his left temporal region complaining of pain.

He had had no vomiting, visual disturbance or seizures. Neurological examination and fundoscopy were normal. A non-contrast CT scan demonstrated a left sided arachnoid cyst with evidence of bleeding into the cyst cavity (fig 1).

Figure 1 CT scan showing right temporal arachnoid cyst.

The child was reviewed that day by a neurosurgeon and listed for craniotomy within a few weeks.

DISCUSSION

In the accident and emergency department a large number of children are seen each day after minor head injury. Some are observed in the department or on a ward but the vast majority are examined, reassured, and discharged with appropriate advice.

The Royal College of Surgeons of England has recently defined indications for skull radiography, admission, and computed tomography in a report on "Management of Patients with Head Injuries".[4] Although a CT scan is clearly required to make, or exclude, the diagnosis of haemorrhage within an arachnoid cyst, the symptoms and signs may be very soft and not included within these standard guidelines.

For this reason we looked at a number of cases of arachnoid cysts: 98 from our hospital and a further 74 reported in the literature, to identify the common presenting features.[2 5–9] The majority of cysts in our series were found incidentally. Three were identified after minor head injury: one cyst had ruptured but none had intracystic haemorrhage.

The most frequently reported presenting symptom was headache, notable because it is often accurately localised (even by very young children). Behavioural problems, a change in personality and reduced mental function were the second most frequently reported signs and occasionally the only presenting features. They are very difficult to elicit and rely on an accurate history from parents or other carers. Ataxia, cerebellar signs, and falls to one side were reported more commonly than nausea, vomiting, and visual disturbance, which are the more familiar indicators of intracranial disorder. Seizures were seen in only one case.

Of additional interest were two cases who presented with solitary ipsilateral cranial nerve lesions associated with arachnoid cysts.[2 9]

In conclusion, haemorrhage into a pre-existing arachnoid cyst is a rare but important diagnosis after minor head trauma. Symptoms and signs are non-specific and rely on an accurate history and carer observations. With this in mind, the emergency physician should have an index of suspicion and consider computed tomography outside of standard guidelines when presenting features could be consistent with this disorder.

Contributors

With thanks to Dr Helen Alton, consultant radiologist at Birmingham Children's Hospital who interpreted and aided us with the CT scan.

Funding: none.

Conflicts of interest: none.

Authors' affiliations
K De, K Berry, S Denniston , Paediatric Accident and Emergency, Birmingham Children's Hospital NHS Trust, UK

Correspondence to: Dr S Denniston, 52 Farnol Road, Yardley, Birmingham B26 2AF, UK; sarah@denniston.org

Accepted for publication 20 August 2001

REFERENCES

1 **Parsch C**, Kraub J, Hofinann E, *et al.* Arachnoid cysts associated with subdural haematomas and hygromas: analysis of 16 cases, long term follow up, and review of the literature. *Neurosurgery* 1997;**40**:483–90.
2 **Rodolfo I**, Prabhakar P. Role of MR imaging in the diagnosis of complicated arachnoid cyst. *Pediatr Radiol* 2000;**30**:329–31.
3 **Nun R**. Arachnoid cysts associated with post-traumatic and spontaneous rupture into the subdural space. *Comp Med Imag Graph* 1997;**21**:341–4.
4 **Royal College of Surgeons**. *Report of the Working Party on the Management of Patients with Head Injuries*. London: The Royal College of Surgeons of England. 1999.
5 **Kuhnley EJ**, White DH, Granoff AL. Psychiatric presentation of an arachnoid cyst. *J Clin Psychiatry* 1981;**42**:167–8.
6 **Rya H**, Makino A, Hinokuma K. An arachnoid cyst involving only the hypoglossal nerve: case report and review of the literature. *Br J Neurosurg* 1999;**13**:492–5.
7 **Jallo GI**, Woo HH, Meshki C, *et al.* Arachnoid cysts of the cerebellopontine angle: diagnosis and surgery. *Neurosurgery* 1997;**40**:31–7.
8 **Koch CA**, Voth D, Kraemer G, *et al.* Arachnoid cysts: does surgery improve epileptic seizures and headaches? *Neurosurg Rev* 1995;**18**:173–81.
9 **Nadkarni T**, Hande A, Nagpal R. Arachnoid cyst within the fourth ventricle - a case report. *Br J Neurosurg* 1995;**9**:675–8.

Acute appendicitis after a fall from a ladder: a traumatic aetiology?

R Hagger, J Constantinou, S Shrotria

Emerg Med J 2002;**19**:366–367

Acute appendicitis is the commonest emergency condition requiring surgery in the United Kingdom. Its precise aetiology, however, remains unproven: dietary, genetic factors, and infectious agents have been implicated.[1] Trauma has also been proposed as a cause of acute appendicitis, but there are doubts as to whether this is a casual or causal relation. In this case report we produce compelling evidence that trauma can cause acute appendicitis.

CASE REPORT

A previously fit 60 year old man was admitted with abdominal pain three days after a fall from a ladder. The mechanism of injury was that the foot of the ladder slipped away with the patient falling from about six feet to land prone on the rungs of the ladder. The patient presented with increasing right lower quadrant pain, worse on movement. Appetite was reduced; the patient was not vomiting and was passing flatus. He was becoming short of breath with a productive cough. On examination he was feverish, 39.7°C, and tachycardic. Abdominal examination revealed tenderness in the right iliac fossa and right groin. There was a firm swelling in the right groin with overlying bruising extending over the femoral triangle of the right thigh with associated scrotal oedema. Routine blood tests showed a leucocytosis. A chest roentgenogram demonstrated patchy consolidation at the base of the right lung; dilated loops of small bowel were seen on an abdominal roentgenogram. Computed tomography revealed dilated loops of small bowel, incarceration of oedematous bowel in a right inguinal hernia, and oedematous changes in

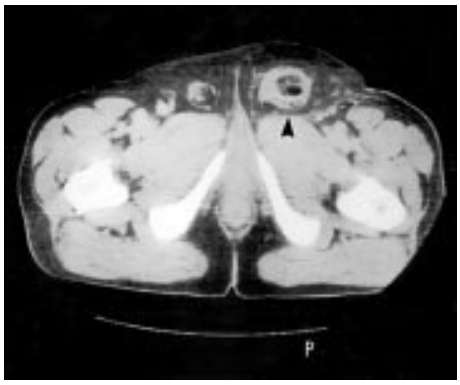

Figure 1 Computed tomogram demonstrating dilated loops of small bowel, and incarceration of oedematous bowel in a right inguinal hernia (arrowed).