

LEFT VENTRICULAR OUTFLOW TRACT (LVOT) VEGETATIONS AND SPONTANEOUS OBLITERATION OF A LARGE RUPTURED INTRACRANIAL MYCOTIC ANEURYSM IN A CASE OF INFECTIVE ENDOCARDITIS

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ABSTRACT

A 10-year-old girl with mild aortic regurgitation presented with cerebral infarction. Two-dimensional echocardiography showed vegetations on the septal wall of the left ventricular outflow tract without involvement of the aortic valve itself. After successful antibiotic treatment the patient developed an intra-cranial haemorrhage due to rupture of a large intracranial mycotic aneurysm. Consent for surgical treatment of the mycotic aneurysm was not obtained. Twelve months later repeat angiography showed that the aneurysm had undergone spontaneous obliteration.

Keywords: Infective endocarditis, satellite lesions, aortic regurgitation, mycotic aneurysm, spontaneous resolution

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CASE REPORT

A 10-year-old Malay girl presented with sudden left hemiparesis which was preceded by a 3-week history of fever, malaise and cough. On examination she was febrile, pale and looked ill. The liver was palpable 1 cm below the costal margin. She had a dense left hemiplegia and left upper motor neurone facial palsy. Apart from a tachycardia of 100/min the only abnormal cardiac sign was an early diastolic murmur, loudest at the left sternal edge.

Haemoglobin was 8.1 gm/dl and she had a predominantly neutrophil leucocytosis of $16.9 \times 10^9/l$. Two dimensional (2D) echocardiography showed vegetations on the septal wall of the left ventricular outflow tract. The aortic valve itself was free of visible vegetations. The left ventricular internal diameter was at the upper end of normal for her age and weight. (Fig 1). Pulse Doppler echocardiography confirmed mild aortic regurgitation. Computerised axial tomography (CAT) scan of the brain showed a hypodense area in the right temporo-parietal area - compatible with cerebral infarction. The diagnosis of infective endocarditis with embolic cerebral infarction

was made and she was promptly treated with Crystalline Penicillin, 2 mega units every 4 hours and Gentamicin 30 mg every 8 hours. Blood cultures taken at the time of admission were subsequently reported as negative. It was noted that the patient had received antibiotics prior to admission.

There was a significant neurological improvement after admission and by the end of 2 weeks she was able to walk independently with almost complete return of normal motor power. This was accompanied by a general improvement in the patient's condition. Repeat echocardiograph on the thirty-third day of admission no longer showed vegetations. The antibiotics were discontinued after a 6 week course.

Five days after completing the course of antibiotics she suddenly lost consciousness. All 4 limbs were noted to be hypertonic. An emergency CAT scan of the brain demonstrated a large intra-cerebral haematoma in the right posterior parieto-occipital region with haemorrhage in the ventricular system. On contrast enhancement, a large aneurysm 1 cm in diameter was seen in the right occipital region (Fig 2). The patient was managed conservatively and when her condition was more stable a 4 vessel cerebral angiogram was done which demonstrated an aneurysm of the P_4 segment of the right posterior cerebral artery (Fig 3a). There was a degree of neurological recovery over the following month. Surgical treatment of the intracranial mycotic aneurysm was advised but the parents did not consent to surgery. At the time of discharge she was left with a mild left hemiparesis. She was subsequently lost to follow up. In view of the risk of recurrent rupture of the aneurysm, efforts were made to trace the patient. The patient was traced one year after the intracranial bleed and her parents consented to a repeat carotid angiogram. The previously noted mycotic aneurysm was no longer visible indicating spontaneous obliteration (Fig 3b).

DISCUSSION

Satellite lesions of infective endocarditis occurring away from the valve are uncommon but recognised⁽¹⁾. A high velocity stream of blood through a stenosed or regurgitant valve may strike an area of endocardium at a distance from the valve itself. The area of endocardium that is impinged upon by the high velocity jet is damaged and forms a nidus for infection. Satellite lesions in association with aortic regurgitation tend to occur on the mitral chordae tendinae and have even been reported on the anterior cusp of the mitral valve^(1,2). We are aware of only one other published case-report of vegetations

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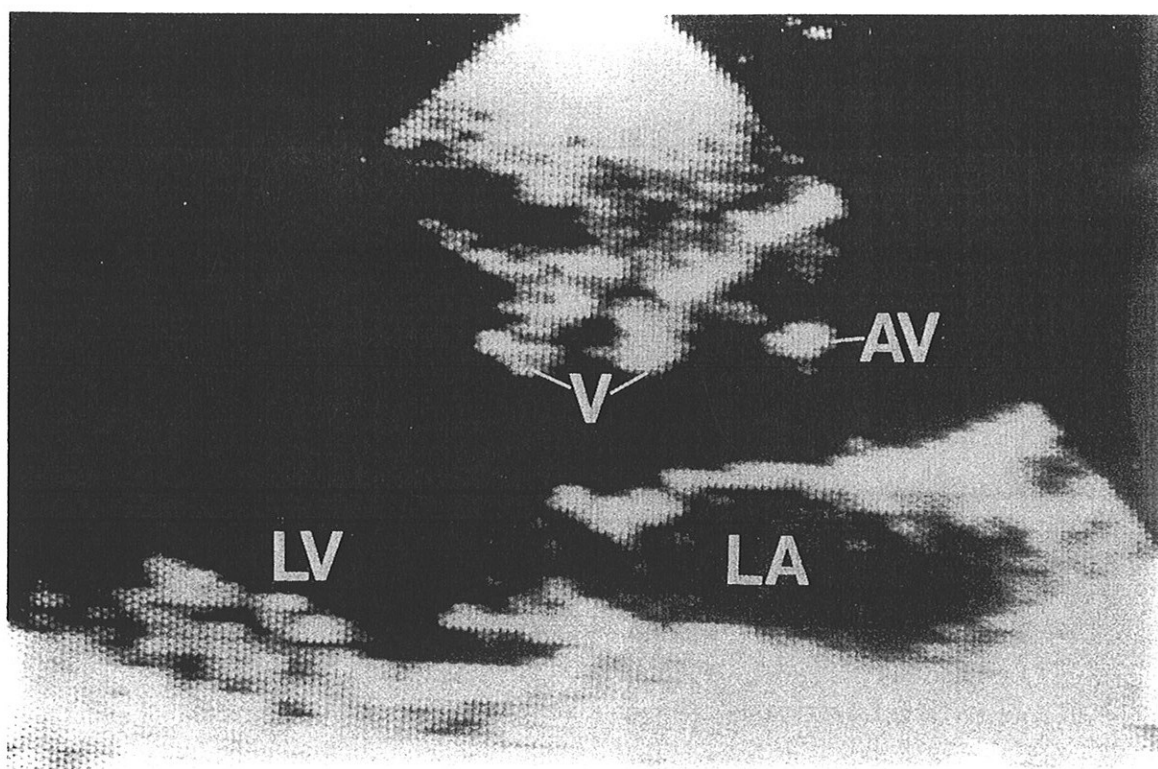
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Fig 1 - Two-dimensional echocardiograph in the left parasternal axis view showing vegetations attached to the septal wall of the left ventricular outflow tract. The aortic valve itself is free of vegetations.

V=vegetations, AV=aortic valve, LV=left ventricle, LA=left atrium.



on the septal wall of the left ventricular outflow tract in a patient with aortic regurgitation⁽³⁾. In that particular case vegetations were first seen on the aortic cusps. In our patient the aortic valve itself was free of visible vegetations.

Intracranial mycotic aneurysms (IMA) are recognised in 10-15% of patients with infective endocarditis^(4,5). Unruptured IMA that develop before or during antibiotic treatment for infective endocarditis undergo spontaneous obliteration in the majority of instances⁽⁵⁾. However, information on the natural history of ruptured IMA is scarce because the majority of these cases are either operated on or die from the effects of the bleed. There have only been a few reports of spontaneous obliteration of ruptured IMA^(6,7). In our patient, angiographically proven spontaneous obliteration of a large IMA has been demonstrated. Indeed as far as we are aware there has only been one other documented case of spontaneous obliteration of a ruptured large IMA⁽⁶⁾. In our patient surgical treatment of the aneurysm was not undertaken because consent was not obtained. However, it is of interest that a recent paper reported poor results in the surgical treatment of mycotic aneurysms involving the P₄ segment of the posterior cerebral artery⁽⁸⁾.

This case report is of interest in two respects. Firstly, it exemplifies the fact that vegetations can occur at a site away from the abnormal valve, and secondly it adds to the existing knowledge on the natural history of ruptured IMA.

ACKNOWLEDGEMENT

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Fig 2 - Contrast enhanced CT scan showing a large aneurysm (arrowed) in the right occipital region, surrounding haematoma and blood in the right lateral ventricle.

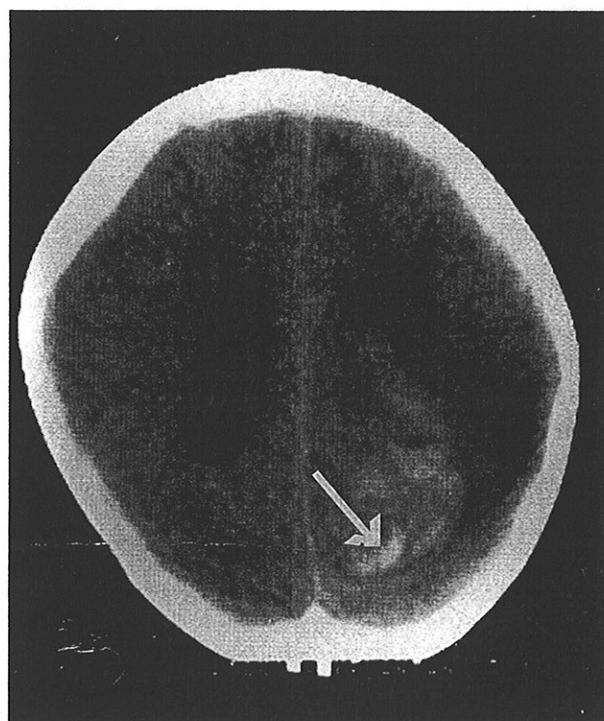


Fig 3 - Vertebral angiogram (a) showing a large aneurysm of the P₁ segment of the right posterior cerebral artery (arrowed) and (b) showing spontaneous obliteration of the aneurysm one year later.

Fig 3a

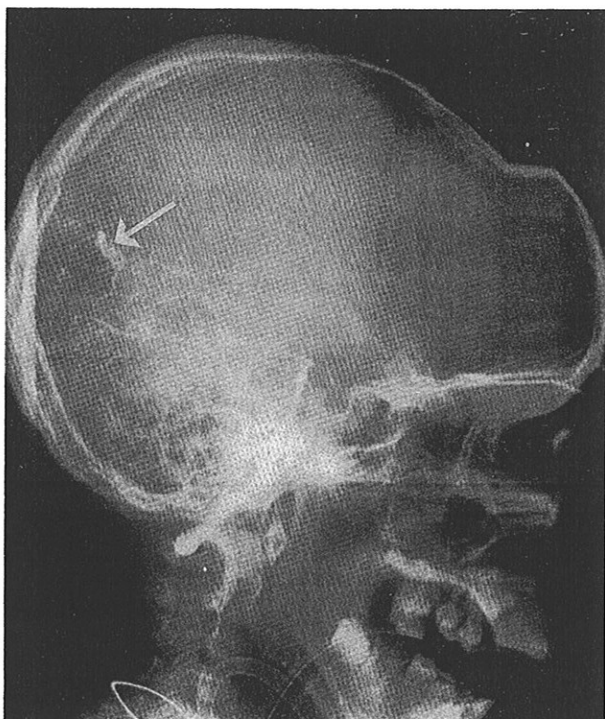
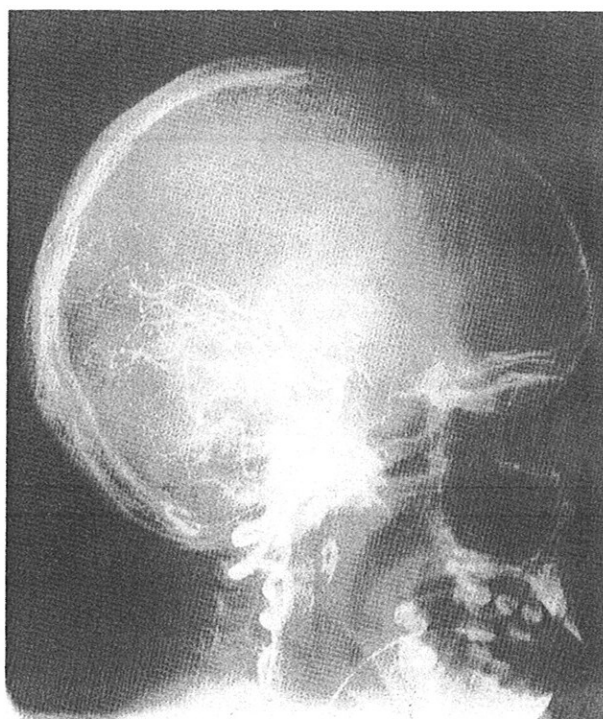


Fig 3b



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