

Tripling of blood pressure by sexual stimulation in a man with spinal cord injury

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Autonomic dysreflexia, with cardiovascular manifestations, is commonly seen in patients with spinal cord injury above the level of C6.

CASE HISTORY

A man of 54 sought advice because of erectile dysfunction. At age 17 he had sustained a C6 fracture resulting in quadriplegia. Over several years he regained 4/5 power in his arms and was able to walk with the assistance of two crutches, power 4/5 in his legs. He had been married for 30 years, with a full sex life until 3 years previously, since when only partial erections had been obtained. He gave a history of severe pounding headaches at the moment of ejaculation. Autonomic spinal cord dysreflexia was suspected, and the response to sexual stimulation was assessed under carefully controlled private conditions with a consultant cardiologist present in an adjacent room. The electrocardiogram and blood pressure were monitored continuously. Resting blood pressure was 93/50 mmHg, heart rate 68/min. He then had sexual stimulation with his wife leading to orgasm. During stimulation the blood pressure rose rapidly and at the point of ejaculation it was 325/210 mmHg, with electrocardiographic changes and heart rate 55/min. Over the next seven minutes the blood pressure fell to 155/90 mmHg, with little change in heart rate (Figure 1).

COMMENT

Autonomic dysreflexia is seen in patients with spinal cord injury above the upper level of sympathetic outflow (C6).¹ It can be precipitated by various stimuli including bowel or bladder distension and urinary tract infection. The main objective sign is a huge increase in systolic and diastolic blood pressure.²⁻⁴ In able-bodied individuals such a rise in

blood pressure would be prevented by baroreceptor-induced vasodilatation and slowing of the heart rate. However, in these spinal cord injured patients, where the connection between the baroreceptor and the rest of the body is broken, the only way to counteract the hypertension is vasodilatation above the lesion level and a baroreceptor mediated decrease in heart rate. This vasodilatation above the lesion explains the flushing, sweating and pounding headache often associated with the syndrome. Since patients with high-level spinal cord injury are usually hypotensive, the high blood pressures that develop during autonomic dysreflexia represent changes of a magnitude that may cause cerebral vascular accidents and death.

The patient had longstanding late cycle atrial and ventricular ectopics. The latter became frequent, with transient ventricular bigeminy, when the blood pressure rose sharply, probably because of a reflex increase in vagal activity (as evidenced by the fall in heart rate). The transient bundle branch block may have resulted from sharply increased afterload on the left ventricle. Thus patients with

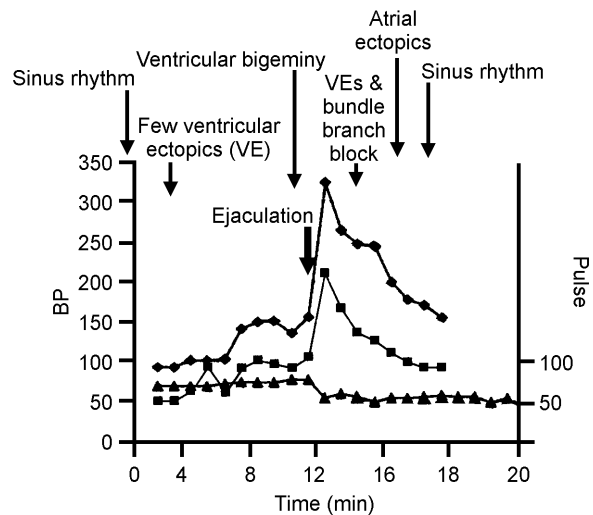


Figure 1 Blood pressure, heart rate and electrocardiographic changes during sexual stimulation. Blood pressure was measured with a Finapres monitor. ◆=Systolic; ■=diastolic; ▲=heart rate

underlying ischaemic heart disease may be at cardiac as well as cerebral risk during these episodes.

Therapeutic measures to prevent this haemodynamic instability have included the use of oral nifedipine⁵ and intravenous infusions of prostaglandin E2.⁶ Our patient had been initially keen to use sildenafil for treatment of his erectile dysfunction. There is some evidence that, in patients with multiple system atrophy, sildenafil can exacerbate hypotension; thus it might in theory help to prevent autonomic dysreflexia.⁷ However, having

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considered the possible catastrophic sequelae of further episodes of autonomic dysreflexia, our patient decided to abstain from further sexual activity.

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Superior mesenteric artery syndrome in a patient with HIV

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One of the contributing factors in superior mesenteric artery syndrome is severe wasting.

CASE HISTORY

A man of 27 with established AIDS was referred with a diagnosis of cerebral toxoplasmosis and clinical features of

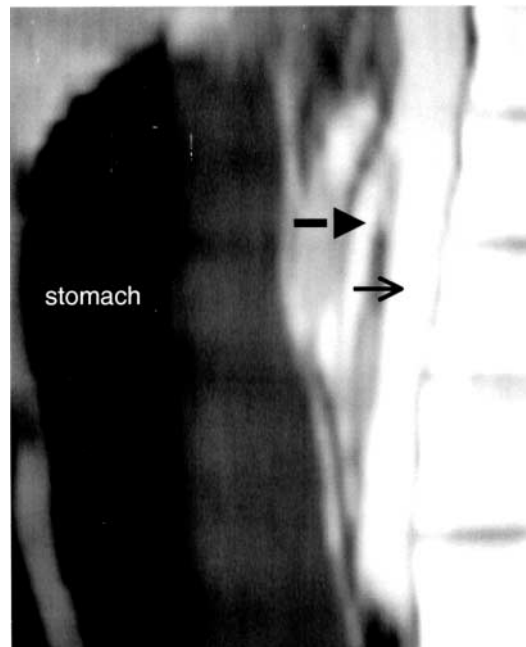


Figure 1 Sagittal CT scan showing narrow angle between aorta (light arrow) and superior mesenteric artery (heavy arrow)

high gastrointestinal obstruction. He had been vomiting profusely for six weeks and was unable to retain anything orally. He now weighed just 30 kg. Inability to retain his antiviral medication had led to worsening immunosuppression, and severe oral and oesophageal candidiasis prevented him swallowing his own saliva. The cerebral toxoplasmosis had resulted in mild left sided hemiparesis. On examination of the abdomen there was epigastric fullness with a positive succussion splash.

Ultrasound showed the stomach to be massively distended, and CT demonstrated obstruction of the third part of the duodenum by extrinsic compression. A narrow aorto-mesenteric angle in the sagittal section was highly suggestive of superior mesenteric artery (SMA) syndrome (Figure 1) and hypotonic duodenography showed typical cut-off at the third part of the duodenum.

An attempt was made at conservative management, initially with total parenteral nutrition and later with nasogastric feeding. However, weight loss continued and the nasogastric aspirate remained greater than 1L/day. Enteral access was necessary for administration of his antiviral and antitoxoplasmosis medication. Surgical intervention was therefore required. The options included a feeding jejunostomy alone (to improve the patient's nutritional and immune status) or a definitive procedure for SMA syndrome. The latter was chosen. Intraoperative findings confirmed the presence of SMA syndrome. The stomach and proximal duodenum were distended and there was visible compression of the third part of the duodenum,

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