neurological deficits and nocturnal recrudescence are quite valuable in differential diagnosis.\[^{[5]}\] We suggest that the anxiety because of stress-elevated intra-arterial blood pressure triggers the radiating pain in our case.

An axial MR is a valuable scan as evaluation of loop formation. If MRI findings suggest any possible VA tortuosity and migration, then MR angiography should be performed to confirm these findings.\[^{[5]}\]

In treatment modalities, it has been experienced that most patients require surgical procedures in spite of they were treated conservatively initially. The traditional surgical procedures are anterolateral microvascular decompression and anterolateral cervical vascular reconstruction of the loop vertebral artery.\[^{[5]}\]

Mild sedatives relieved symptoms. Surgery has been advised as preventive for further progressive disturbances. However she refused the surgical procedure. The onset of analgesia with tricyclic anti-depressants ranges from 3 to 7 days for radicular pain. Pain relief in this patient showed us that sedation (one of common side effects of amitriptyline) was effective to relieve the stress of patients as well as the stress related to hypertension. In our further investigations, we saw that she was calm, and her blood pressures were at normal levels.

This case is, the youngest and only case with a pain aggravated by anxiety as far as we have seen in vertebral artery compression syndromes. Loop compression has some characteristics, which differentiate it from other cervicobrachialgia syndromes. The MR with MR angiography is the preferred modality in diagnostic work-up. Conventional angiography may be indicated only if the vascular reconstruction is planned for the compressive evaluation, which includes the balloon occlusion test.

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**Intracranial actinomadura granuloma**

Sir,

Intracranial granulomas caused by aerobic bacteria of the actinomyces group are rare. We report a case of an intracranial granuloma caused by Actinomadura pelletieri. Our literature survey did not reveal any report of such a granuloma.

A 24-year-old woman presented with headache of 1-year and seizures of 1-month duration. About a week prior to the onset of the seizures, she had developed a swelling on the scalp close to the midline in the left parietal region discharging pus intermittently. She had history of injury to the scalp, ten years...
earlier. An excision was done elsewhere, the biopsy was not sent and routine cultures were negative. The wound did not heal primarily and despite antibiotics she developed a persisting discharging sinus at the site of the incision. Plain X-ray skull showed evidence of osteomyelitis and computerized tomogram (CT) of the head revealed a hyperdense, contrast enhancing lesion in the left parietal parasagittal region, with significant perifocal edema. The sagittal sinus and adjacent dura were thickened and enhancing [Figure 1]. Clinically she had bilateral papilloedema and right lower limb weakness. At surgery, there was large collection of pus and infected granulation tissue between the fascial planes of the scalp. The bone was osteomyelitic and the dura was thickened and adherent to the underlying lesion. The lesion was firm, grayish white and avascular with reddish granules on the surface. On histology there were multiple microabscesses within which were granules [Figure 2]. Gram stain showed slender irregularly stained gram-positive filaments [Figure 3]. Two weeks later, the cultures on sabouraoud dextrose agar (SDA) grew colonies, which were heaped, glabrous, cerebriform, and coral red in color with no aerial mycelium or diffusible pigment which is typical of this organism. The identification of the organism as *Actinomadura pelletieri* was confirmed by Centers for Disease Control and Prevention, Atlanta, GA 30333, USA (Lab. No. 97019255). She was started on high dose of cotrimoxazole (trimethoprim and sulphamethoxazole). Postoperatively the wound healed primarily. The seizures were well controlled with medication and the weakness in the leg gradually improved to normal.

*Actinomadura pelletieri* are aerobic, nonfastidious gram-positive branching organisms. Optimum temperature for growth is 37°C, which is usually slow and takes about 2–3 weeks for the colonies to appear. The colonies are dry, adherent, waxy, and have a characteristic coral red nondiffusible pigment. There are a few reports of this organism causing mycetoma both of the foot and extrapedal locations including the scalp.[1–3] This organism gets inoculated into the skin through minor injuries and over a period of time, under appropriate conditions causes a chronic suppurative infection. The infection spreads along subcutaneous fascial planes and forms numerous small abscesses, which drain via multiple sinus tracts, discharging coral red granules. There is no cementing substance produced by this organism, which probably contributes to its rapid contiguous spread.[4] The haematoxylin and eosin (H&E) stained sections show abscess cavities containing typical grains which are about 0.3–0.5 mm in diameter, often semilunate and deeply stained by hemotoxylin. These, unlike the grains of Actinomadura madurae, have a sharply delineated border without the fringe of hyphal tips. They are so typical that a specific diagnosis of *A. pelletieri* can be made with considerable certainty by low power examination of the H&E stain.

In this patient, the organism may have got implanted subcutaneous, at the time of the scalp injury. The discharging sinus and the symptoms of intracranial involvement appeared simultaneously indicating a more recent onset of growth after lying dormant for many years. Since the entire lesion was localized to one area, the lesion seems likely to have spread contiguously rather than by a hematogenous spread. At surgery, total excision was carried out as this offers the best chance of cure and postoperatively she was put on cotrimoxazole to which the organism is sensitive.[5] This case, re-emphasizes the need to consider a fungal like infection caused by bacteria of the actinomyceetes group, apart from tuberculosis in any intracranial mass with infection in different planes and an overlying discharging sinus. Appropriate cultures and stains would then be required to reveal the true nature of the organism and ensure that appropriate therapy is instituted.

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Cervical dumbbell ganglioneuroma producing spinal cord compression

Sir,

A 39-year old man presented with complaints of progressive weakness and numbness of all four limbs for six months. There was moderate spastic tetraparesis that was more marked on the left side, and hypoesthesia below the C5 dermatome.

Magnetic resonance imaging (MRI) showed a large extramedullary dumbbell mass at the C4-C5 level. The tumor was hypointense on the T1 and hyperintense on T2 images. The spinal cord was severely compressed [Figure 1A and B].

A two-staged operation was performed to resect the tumor. First, the patient was operated through a posterior cervical approach. Wide laminectomy of C4 and C5 was done. The mass was solid, well capsulated, elastic, moderately vascularised, purely extradural and ventrolaterally located to the spinal cord. The lesion originated from cervical nerve C5, which was resected with tumor [Figure 2A].

Histological examination of both tumor masses confirmed that the lesion was a ganglioneuroma [Figure 3].

Discussion

Kyoshima et al.\(^1\) surveyed the literature on the subject and identified a total of only five pathologically confirmed cases of cervical spine ganglioneuromas. One patient was an 18-month old child and rest of the patients were young adults. Von Recklinghausen’s disease was present in two patients. The symptoms spinal cord compression were present in all reported cases. Two patients had bilateral tumors. The origin of tumors was sensory root ganglion or cervical nerve. In all the reported cases, the tumor growth was in dumbbell pattern. Intraspinal extradural growth was observed in three patients, while in-