Sir,
The precise localization of brain convexity lesions can be inaccurate due to the oval shape of the skull and also to unreliable external landmarks. Accuracy can be improved using intraoperative ultrasound, conventional and frameless stereotaxis and neuronavigation.[1‑4] Neuronavigation has become a standard procedure in many neurosurgical centers; however, in most departments worldwide, this tool is not available due to its high cost.

As long as computed tomography (CT) and magnetic resonance imaging (MRI) are more accessible in hospitals or private institutions, good precision may be achieved by using these radiological tools to calculate the localization of brain convexity lesions beneath the skin. Unfortunately, not all the neurosurgical services can have such sophisticated and expensive intraoperative stereotactic systems.

We operated on 32 patients after localizing their lesion by using craniomapper. Twenty-one patients suffered from intracerebral hemorrhage, and the other 11 patients suffered from high convexity tumors.

A 30-year-old male presented by sudden onset of right side weakness and aphasia. On examination; the patient was fully conscious, oriented, and aphasic, with grade 1 right side hemiparesis. CT brain revealed left parietal intracerebral hematoma. He underwent CT scan again after putting craniomapper on his head. After getting the CT scans with craniomapper, the proper site for burr hole needed to evacuate the hematoma where precisely determine. The surgery where done using a single burr hole <1 cm in diameter and the hematoma where significantly evacuated through this tiny opening. Postoperatively, the patient recovered very well, and his hemiparesis was recovered completely over 1 month period. Immediate CT scans postoperatively revealed a significant reduction in hematoma which is nearly evacuated totally [Figure 1].

A 46-year-old female patient presented by a sudden attack of convulsion before the time of admission.

The convulsion was controlled by diazepam and phenytoin. On examination, the patient regained full consciousness postictal. She complained of right hemiparesis grade 3 which improved to grade 5 after dehydrating measures. CT scans and MRI with contrast revealed left parietal calcified space occupying lesion. She underwent CT scans again after putting craniomapper on her head and the proper site for craniomapper needed to remove the tumor where

Figure 1: (a) Computed tomography scans show large left mid and high parietal intracerebral hematoma with midline shift, (b) scalp markers on patient's head as rectangular mark is the hematoma, the circular mark is site proposed to be around the bur hole, and the two pints is the sites to place brain cannula, (c) the tinny burr hole used to evacuate hematoma, and (d) computed tomography scans show highly significantly evacuated large hematoma with subsequently resolved midline shift
precisely determined using the craniomap CT scans. The surgery was done using an optimal craniotomy flap and the tumor was totally removed through this optimal opening. Postoperatively, the patient recovered very well. MRI postoperatively revealed total removal of the tumor [Figure 2].

This craniomapper (Surgiwear, India) frame allows the surgeon to define precisely the two-dimensional planes for the targeted lesion in the brain and allow him/her to do operate the lesion with very small skull opening.

In all cases operated on, the margin of bony mistake “either for intracerebral hematomas or high convexity tumors” was almost totally vanished. Using the craniomapper as a new device for lesion localization proved to be very accurate either in the 21 patients who operated by a one cm diameter burr hole to evacuate intracerebral hematomas or in the 11 patients who treated for high convexity tumors by using very optimal craniotomy to totally remove the tumor. There were no lesional boundaries in all studied patients that need extra bony removal or more brain retraction.

Further, the use of a stereotactic frame or neuronavigation systems is not available widely in neurosurgical services in most of the low socioeconomic countries. The craniomapper can be an alternative in such neurosurgical centers when precise craniotomy is required for brain lesion in high convexity area. This is particularly can be applied in routine or emergency surgery where wide craniotomy is not desired. Furthermore, the craniomapper does not need any special training for the users and it is very safe for the patients.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

Hossam Elnoamany
Department of Neurosurgery, Faculty of Medicine, Menoufia University Hospital, Menoufia, Egypt

Address for correspondence:
Prof. Hossam Elnoamany,
Department of Neurosurgery, Faculty of Medicine, Menoufia University Hospital, 64, Gamal Abdel Naser Street, Shebin El Kom, Menoufia, Egypt.
E-mail: hae1967@gmail.com

References

Figure 2: (a) Magnetic resonance T1-weighted images show left high parietal tumor, (b) computed tomography scans with superimposed craniomapper show the left high parietal tumor, (c) patient’s photo shows scalp marks denoting the exact place of the tumor, and (d) postoperative magnetic resonance T1-weighted images with contrast show complete removal of the tumor.
Sir,

In India, tuberculosis is the most common cause of spinal infections. The routinely followed practice in cases of infective spondylitis without instability is to start empirical antitubercular therapy where the clinical picture, radiological, and magnetic resonance imaging (MRI) findings resemble the tuberculosis infection of the spine, although tissue biopsy and culture are done in some cases to confirm the diagnosis. Here, we report a case of spinal infection in a healthy middle-aged immunocompetent man, in whom the clinical findings and the radiological images were similar to tuberculous infection and were misdiagnosed as tuberculous spondylitis on admission and later on, the biopsy and culture of the decompressed specimen surprisingly turned out to be Salmonella osteomyelitis.

A 47-year-old male presented to our outpatient department with mid back pain for about 1 month, which started worsening for the past 4 days before admission. On clinical examination, he was afebrile, normotensive, and there was tenderness over the spinal process of D6 to D9 without any obvious swelling or neurological deficit. The laboratory tests revealed C-reactive protein (CRP) of 9.6 mg/L and erythrocyte sedimentation rate (ESR) was 50 mm/h. MRI study showed D7-D8 Spondylodiscitis associated with small pre- and para-vertebral, anterior epidural space abscess [Figures 1 and 2].

An empirical diagnosis of tuberculosis spine (Dorsal spondylitis) was made, and he was started on antituberculous treatment with isoniazid, rifampicin, pyrazinamide, and ethambutol. Computed tomography-guided biopsy done at initial evaluation was inconclusive and showed scanty nonspecific inflammatory cells only. Subsequently, after a few days, as he had severe pain not responding to conservative measures, he was subjected to left posterolateral thoracotomy, D7 D8 corpectomy, and D6-D9 fusion with titanium cage packed with cancellous bone graft, rods, and screws [Figure 3]. Intercostal drainage tube was maintained for 3 days and was removed after ensuring good lung expansion. Postoperatively, his pain was relieved, and he made uneventful recovery.

To our surprise, Histopathological studies revealed infection along with neutrophil infiltration and granulation tissue hyperplasia of the dorsal vertebra with no evidence of tuberculosis. Microbiological reports confirmed Salmonella enteritidis infection in the surgical specimen. Hence, he was diagnosed to have dorsal spondylitis caused by S. enteritidis. Blood culture was negative. Postoperatively, tests for hemoglobinopathy were done and found to be negative. Serum agglutinins were normal.

Based on the antibiotic susceptibility pattern, he was started with levofloxacin and amikacin administered.