Abnormal U-shape course of central venous catheter

Sir,

A 50-year-old male patient with shortness of breath was referred from other hospital to our center. After doing all routine blood investigations and bedside chest X-ray in the casualty ward, patient was transferred to intensive care unit. Patient had triple lumen central venous catheter (CVC) in right internal jugular vein (IJV) which was inserted in outside hospital. However, there was no back flow in all 3 lumens, so it was removed. Chest X-ray revealed abnormal U-shape course of CVC [Figure 1]. Before inserting new central venous line, ultrasound of right IJV was done which showed large valve in right IJV [Figure 2]. Central line was inserted in left IJV under ultrasound guidance. Back flow in all 3 lumens of CVC was present.

Valve in IJV is present in 88–100% of cases. It inhibits retrograde flow from the right atrium to the brain.[1] This valve prevents a sudden increase in the jugular venous pressure during positive pressure ventilation or conditions with raised abdominal pressure (e.g., ascites). Thereby it prevents cerebral congestion by avoiding excessive backward flow to the brain.[1] The types of valve leaflet can be unicuspid (1.4–16%), bicuspid (77–98%) or tricuspid (0–7%).[2] There is a risk of persistent incompetence of the IJV valve by CVC.[3] Valve damaged during IJV catheterization can be a site for thrombus formation.[3] Large venous valve causing difficult central catheter placement has been reported.[4] In the present case, large valve in IJV might have changed the course of guidewire in the reverse direction. CVC rolled over the guidewire acquired the same U-shape course of

Figure 1: Chest X-ray showing abnormal U-shape course of central venous catheter

Figure 2: Ultrasound image showing large valve in internal jugular vein
guidewire. There was no backflow in all 3 lumens due to reverse bent of CVC at IJV valve. It is always better to do ultrasound screening of course and structure of IJV before CVC.

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References

Should ratol paste be banned?

Sir,

Ratol paste, a commonly used rodenticide in Indian houses contain 3% yellow phosphorus. Yellow phosphorus is a general protoplasmic poison causing multiorgan failure.\[1\] Doses >1 mg/kg are almost invariably fatal.\[1\]

Ratol paste poisoning is either suicidal or accidental. The clinical course of ratol paste poisoning is different from that of most other poisons. The patients are usually asymptomatic during the initial 72 h of ingestion, or they may have signs and symptoms of gastrointestinal irritation. After 72 h they develop deranged liver function, acute hepatic failure, coagulopathy. Central nervous system effects include changes in mental status like confusion, psychosis, hallucinations, and coma. Cardiac toxicity includes hypotension, tachycardia, arrhythmias, and cardiogenic shock. Some patients may develop acute tubular necrosis and acute renal failure.\[1‑3\] Because of the initial asymptomatic phase few patients do not reveal about ratol paste ingestion and present late to the hospital. Patients who present late after consumption of the lethal dose develops fulminant hepatic failure with mortality of 100%.\[2\] In severe ingestions of ratol paste, patients do not have the initial asymptomatic stage, and they die due to shock and cardiopulmonary arrest in early stages itself.\[4\]

There is no specific antidote for yellow phosphorus poisoning. Treatment is directed at removal of the poison and supportive therapy.\[1‑3\] Aluminum phosphide, zinc phosphide are the other rodenticides available. They are mainly used in agricultural fields in contrast to ratol paste, which is used in houses. Also, ratol paste is commonly mistaken for toothpaste and consumed by children. And the product directions suggest that the paste be applied to bread to enable ingestion by rodents, thus making it appealing to children as well.\[1\] Hence, accidental poisoning is more common with ratol paste.

This fatal poison is freely available over the counter in toxic doses at very cheaper prices.\[3\] Similar to any other poisoning, prevention strategies by restricting access to this poison, creating public awareness regarding the lethality of ratol paste and regulating the market sale of this compound should be helpful. However, this lethal ratol paste is easily available at cheaper costs and accidental poisoning is more common, especially among children. Hence, we call for a ban on market sales of ratol paste.

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