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Letter to the Editor

How can a Patient who was Underwater for an Hour Survive?

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Letter to the Editor

We read with interest the article by Kansakar *et al.* regarding a 40-year-old female patient who reportedly suffered a near-drowning incident accompanied by respiratory distress and hypoxia ^[1]. Initial assessment was limited to measuring oxygen saturation and performing lung ultrasonography, which revealed pulmonary edema ^[1]. Due to persistent respiratory insufficiency and limited treatment options, the patient was transferred to a higher-level care facility. While the case report is informative, several points warrant discussion.

First, it is unclear why the patient was not immediately sedated, intubated, and ventilated using a bag-valve-mask (with supplemental oxygen). Intubation and bag-valve-mask ventilation should be available even in a rural hospital in Nepal. Given an oxygen saturation of 72% upon admission, sonographically confirmed pulmonary edema, and respiratory distress persisting despite oxygen administration, the patient should have been immediately intubated and mechanically ventilated ^[2]. Did oxygen saturation improve following the administration of oxygen via nasal cannula? Did the initial ultrasound examination also provide indications of pulmonary hypertension, pulmonary embolism, or intraventricular thrombus formation, and did fluid resuscitation exacerbate the pulmonary edema?

The second point concerns the report stating that the patient survived after being underwater for an hour ^[1]. How can a person survive after being submerged for an hour? After such a long period underwater, the patient ought to be dead. The sequence of events as described, therefore, cannot correspond to the facts. In this context, it would be important to know whether or not the patient could swim. If she could swim, it is conceivable that she might have repeatedly brought her head to the surface to breathe. Was the incident witnessed, or is the medical history based on the assumptions of witnesses who did not actually see the event themselves? Is there a photograph of the location where the patient entered the water? Was the river in flood at the time of the incident, and did it occur during the monsoon season? Was the patient recovered from the water at the same spot where she had entered, or was she carried away by the river's current? If the latter is the case, at what distance from the entry point was she found? Is it conceivable that this was not an accident at all, but that the patient was deliberately pushed into the water? Is it conceivable that the injuries were caused not by the suspected contact with rocks, but by the application of force by another person? Since the exact circumstances of the event have not been precisely described, it is difficult to determine whether the patient actually suffered a near-drowning incident.

The third point concerns the absence of a neurological examination ^[1]. Given that the patient presented with an oxygen saturation of 72% and was confused upon admission, it is conceivable that she had also suffered cerebral hypoxia. It would be important to obtain information regarding her level of consciousness and alertness, pupillary response, reflex status, muscle tone, the presence of pyramidal tract signs, and response to painful stimuli. A basic neurological assessment should be feasible even in the emergency department of a rural hospital.

The fourth point is that the patient was not evaluated for polytrauma ^[1]. In a patient with numerous superficial injuries, it is entirely possible that she also sustained more severe internal injuries such as fractures, organ ruptures, contusions, or vascular ruptures or dissections.

The last point concerns the lack of information regarding the subsequent clinical course: Did the patient survive, and if so, did she sustain permanent damage resulting from potential cerebral hypoxia? Was there evidence of hypoxic brain injury on MRI scans at the secondary hospital? Did the pulmonary edema resolve completely? Was the diagnosis of pulmonary edema confirmed at the hospital providing follow-up care? If the patient died, it would be important to know whether an autopsy was performed and what the findings were.

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