A Mind-Boggling Exchange: Ischemic Stroke Following Plasma Donation



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Clinical Scenario

A 39-year-old regular plasma donor presented with sudden dizziness, left-sided facial droop, ataxia, and nystagmus post-donation, leading to an NIH Stroke Scale (NIHSS) score of five. The absence of hemorrhage or large vessel occlusion on imaging prompted thrombolytic administration, which resulted in remarkable improvement, reducing his NIHSS to zero within two hours. Magnetic resonance imaging identified acute infarcts in the thalami and adjacent midbrain. A subsequent workup revealed a patent foramen ovale hypercoagulability with negative (PFO) tests. Post-discharge, the patient successfully underwent PFO closure.

Citations

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Literature Review

Plasmapheresis, involving the substitution and extraction of plasma, carries potential complications from common electrolyte imbalances and hypersensitivity to infrequent yet serious conditions like dysrhythmias, heart failure, and arterial thrombosis. The procedure prompts a temporary hypercoagulable state, intensifying risk in donors with inherited thrombophilic disorders or structural heart disease. Platelet activation contributes significantly to this state, potentially driving inflammatory cells to vascular injuries. Furthermore, blood separation membranes may inadvertently incite platelet activation. Consideration of flow and exchange rate during the procedure is also essential. For instance, right atrial pressure increases in emergent hemodialysis patients may precipitate paradoxical embolisms through a PFO, while dialysis can also reduce cerebral blood TIOW.

Unique Aspects

This case underscores a rare but significant risk associated with plasma donation. It illustrates how even benign procedures can disrupt delicate homeostatic equilibria, causing severe repercussions. Finally, it illuminates the ethical quandary of incentivizing potentially risky procedures with monetary rewards, particularly when pre-screening may not be accessible to all donors.

Recommendations

Patients should undergo comprehensive screening before donation, with those at high risk considering antiplatelet prophylaxis due to potential complications.

Conclusions

conclusion, plasma donation can yield severe complications like ischemic stroke despite being generally benign. Patient education regarding potential side effects, thorough screening, and prophylaxis for at-risk populations is crucial.