Osmotic Demyelination Syndrome

- Acute demyelination from rapid shifts in serum osmolality
- Classic setting: Rapid correction of hyponatremia
- ODMS may occur in normonatremic patients!

Osmotic Demyelination Syndrome

- Central pons T2 hyperintensity with sparing of periphery
- 50% in pons (CPM); 50% in extrapontine sites (EPM)
- Central fibers involved; peripheral fibers spared
- Basal ganglia (BG)
- Cerebral white matter (WM)
- CPM + EPM = almost pathognomonic for ODMS

Central pontine myelinolysis

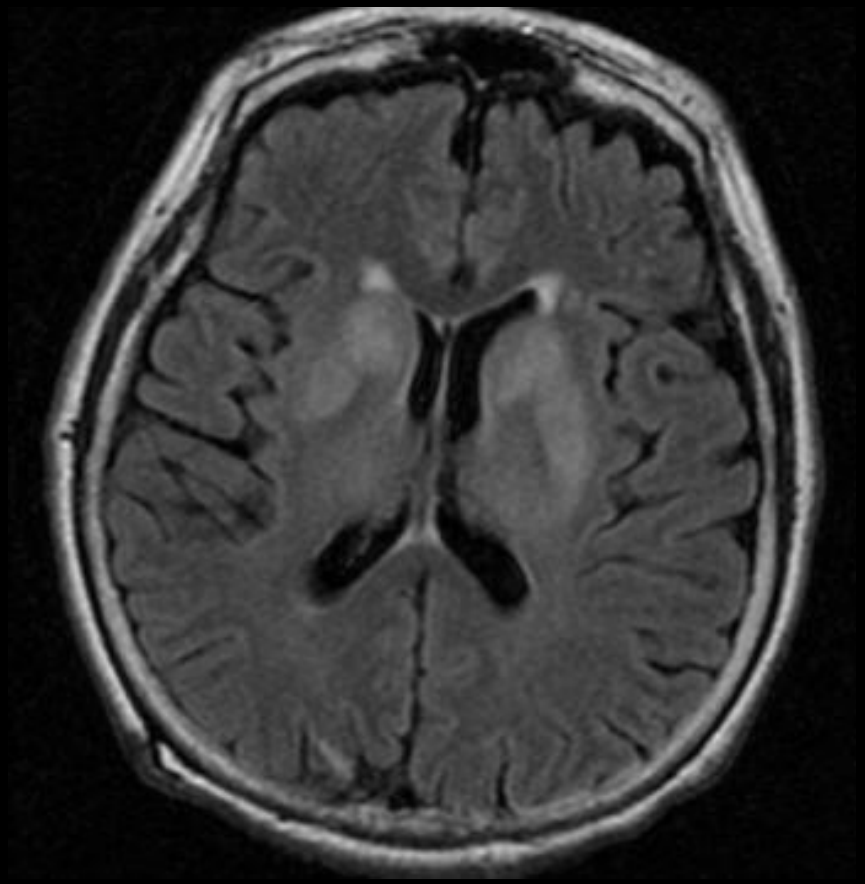
Can be triangle with apex in mid line pointing forward

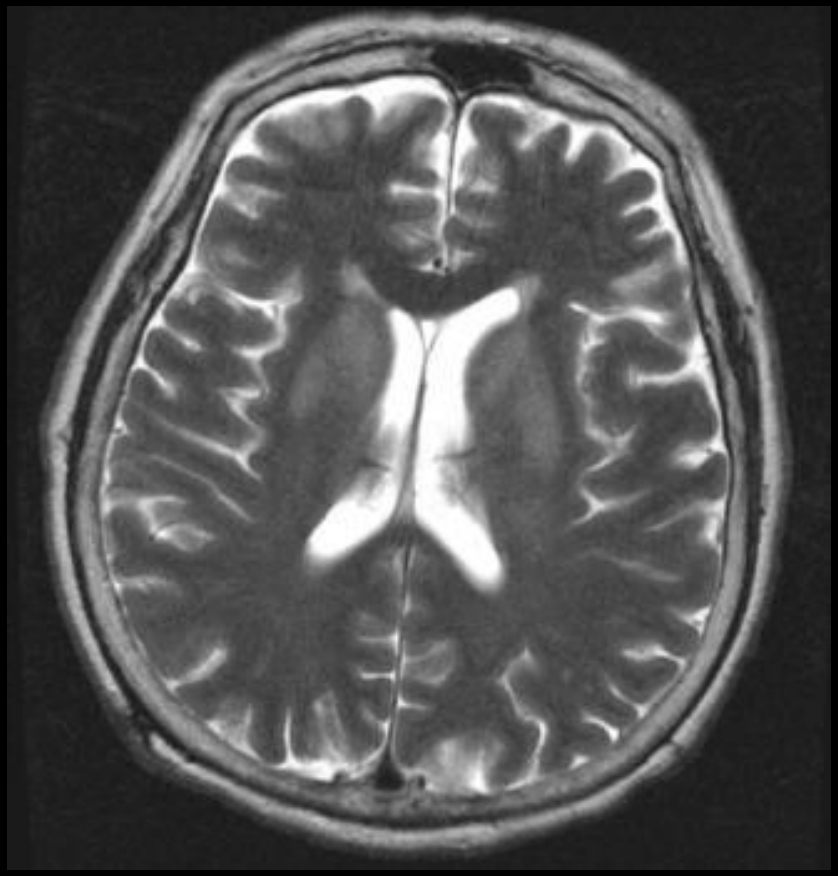
Infarct typically off midline with apex pointing posteriorly

= myelinolysis

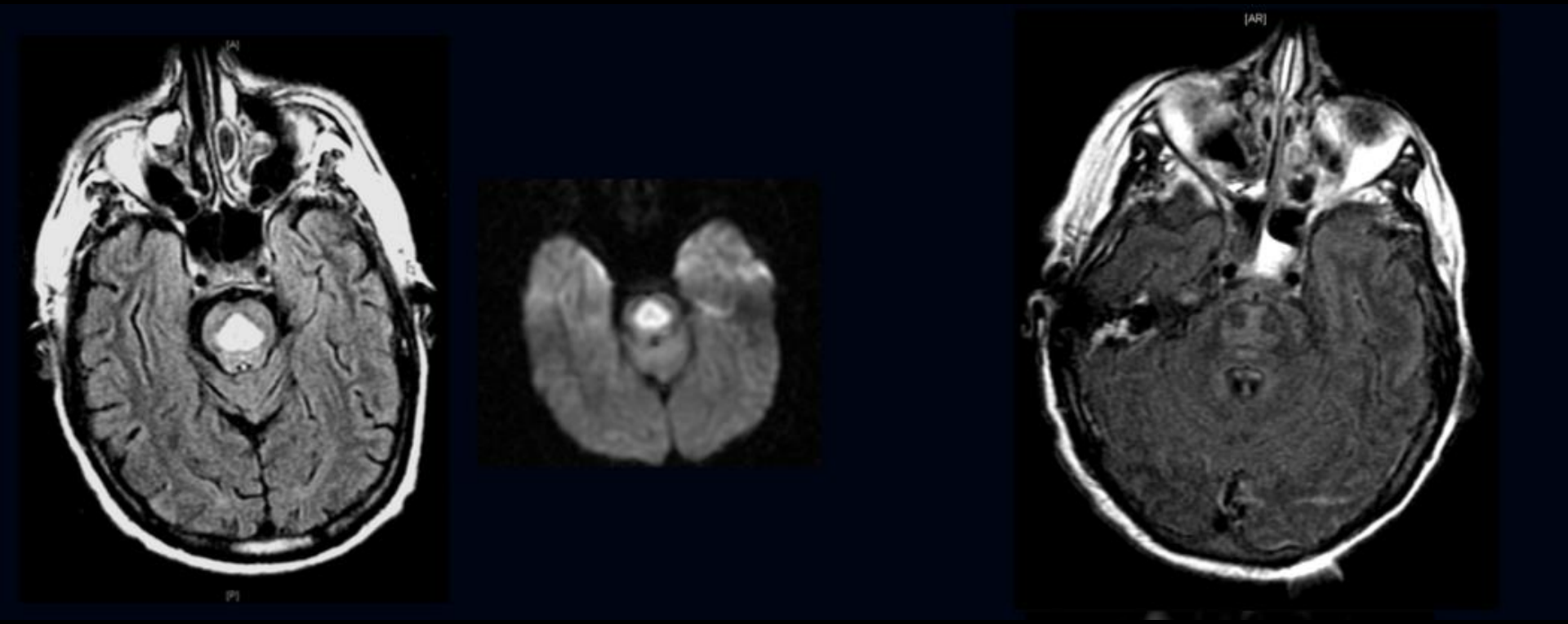
= Infarct

Osmotic myelinolysis





Osmotic Demyelination



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- Often biphasic when hyponatremia present
- ODMS symptoms emerge 2-4 days
- Occasionally weeks after correction of hyponatremi

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Download to Presentation

Axial T2WI MR in a hyponatremic, alcoholic patient with rapid correction of serum sodium shows central pons hyperintensity with sparing the peripheral pontine fibers. These findings are characteristic of osmotic demyelination syndrome.