Spontaneous Subdural Hematoma and HIV - Are the two related?
Sarah Margolskee, MD

INTRODUCTION

- A subdural hematoma typically develops due to tears of the bridging veins or less commonly arterial rupture with bleeding between the arachnoid membrane and the dura
- Increased risk in elderly and those with cerebral atrophy
- Most commonly due to head trauma
- Non-traumatic SDH: rupture of cortical branch of MCA, AVM, meningiomas, underlying coagulopathy or rarely aneurysmal subarachnoid hemorrhage
- 0.7-6.7% of all SDH’s found to be non-traumatic in origin

CLINICAL PRESENTATION

- 41 year old male with a PMH of HIV on HAART
- Last known CD4+ count of 1257
- Presented with headache of 2 weeks duration: pulsatile pain localized to the forehead
- Associated symptoms included “flashing lights” with no additional visual field defects, nausea and one episode of emesis
- Denied any episodes of trauma or recent falls
- Social history indicated no recreational drug use and minimal EtOH intake
- Physical exam revealed no focal neurological deficits and was otherwise within normal limits

LABS/DIAGNOSTIC TESTS

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
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</tr>
<tr>
<td>INR</td>
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</tr>
<tr>
<td>CRP</td>
<td>1.0</td>
</tr>
<tr>
<td>CD3+</td>
<td>1624</td>
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<tr>
<td>CD4+</td>
<td>1042</td>
</tr>
<tr>
<td>CD4 count</td>
<td>1042</td>
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<tr>
<td>HIV Panel</td>
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<tr>
<td>Urine Toxicology</td>
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</tbody>
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DISCUSSION

- Literature review revealed two similar cases of SDH in HIV positive patients with no thrombocytopenia, history of trauma or appreciable brain atrophy

POTENTIAL CONTRIBUTING PATHOLOGIES

- Abnormal platelet function in the presence of auto-antibodies, high immunoglobulin proteins interfering with coagulation factors or vasculitis in the setting of endothelial inflammation
- HIV protein: gp120 may activate smooth muscle cell proliferation leading to vascular lesion formation
- HIV infection induces immune activation and chronic inflammation which is only partially corrected by HAART
- Studies in HIV patients on cART showed increased platelet activation (indicated by P-selectin expression) compared to healthy volunteers
- Increased mitochondrial dysfunction and activation of apoptosis in platelets
- Chronic activation led to platelet exhaustion of granule stored factors
- Increased generation of platelet activating factor (PAF) in HIV-1 infected patients

References: