A 79-year-old female with a medical history of hypertension, type II diabetes, and CVA who presented with MRI brain showing a right temporoparietal mass. Case Presentation:

Hospital Course:
- Patient was started on dexamethasone prior to surgery due to the extensive amount of vasogenic edema.
- She underwent a temporal craniotomy with resection of the mass.
- Levetiracetam was started off-label as seizure prophylaxis.
- Postoperatively, her hemoglobin and number of days post-operatively (POD). Levetiracetam was started on post-operative day 0 and was discontinued on post-operative day 10. Development of leukopenia was witnessed with start of levetiracetam and improvement in leukopenia was observed with discontinuation of the medication.
- No acute gastroenterological intervention was deemed necessary at that time.
- The patient was also noted to develop thrombocytopenia and leukopenia.
- Thrombotic thrombocytopenic purpura, disseminated intravascular coagulation, and heparin-induced thrombocytopenia were ruled out.
- Pantoprazole and enoxaparin were discontinued without any improvement in cell counts.
- Two units of packed red blood cell were transfused with an appropriate response.
- No acute gastroenterological intervention was deemed necessary at that time.
- The patient was also noted to develop thrombocytopenia and leukopenia.

Laboratory Studies:
- Graphs depicting relationship between white blood cell count and number of days post-operatively (POD). Levetiracetam was started on post-operative day 0 and was discontinued on post-operative day 10. Development of leukopenia was witnessed with start of levetiracetam and improvement in leukopenia was observed with discontinuation of the medication.
- Graphs depicting relationship between red blood cell count and hemoglobin and number of days post-operatively (POD). Levetiracetam was started on post-operative day 0 and was discontinued on post-operative day 10. Patient experienced an acute bleed requiring transfusion of 2 units of RBC on POD 5, followed by a steady decline in Hgb and RBC. Improvement in anemia was observed with discontinuation of the medication.
- Graphs depicting relationship between platelet count and number of days post-operatively (POD). Levetiracetam was started on post-operative day 0 and was discontinued on post-operative day 10. Development of thrombocytopenia was witnessed with start of levetiracetam and improvement in thrombocytopenia was observed with discontinuation of the medication. Patient was transfused 5 units of platelet on POD 8 and POD 9.

Discussion:
- Levetiracetam (Keppra) is a pyrrolidone derivative and acts as an anti-epileptic medication by modulating neurotransmitter release.
- Levetiracetam was approved by FDA for partial seizure, myoclonic seizure, and generalized tonic-clonic seizure. It is used off-label as seizure prophylaxis.
- This medication is associated with a few side effects that include behavioral changes, headache, drowsiness, and weakness.
- Hematologic adverse effects are rarely caused by this therapy. These effects include anemia, thrombocytopenia, and leukopenia.
- Pancytopenia is a very rare adverse effect caused by levetiracetam. There are fewer than four case reports in the medical literature discussing the association between levetiracetam and pancytopenia.
- The pathogenesis behind this relationship is unclear.
- Our patient developed pancytopenia induced by levetiracetam which resolved after we discontinued this medication.
- Her hemolysis profile and blood smear did not reveal any signs of hemolysis. Therefore, we hypothesize that levetiracetam induced pancytopenia by causing bone marrow suppression.

Conclusion:
- Clinicians should be aware that levetiracetam induces severe pancytopenia.
- Clinicians should consider changing levetiracetam to other agents in patients who develop pancytopenia with negative hemolysis profile.
- Further studies should be conducted to explain how levetiracetam induces bone marrow suppression and to find a diagnostic test for diagnosis.
- This case will serve to spread awareness of a rare cause of pancytopenia and to hypothesize how this medication causes pancytopenia.