Assessing the Diagnostic Pathway in Pediatric Brain Tumors: Factors Associated with Longer Diagnostic Latency

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**BACKGROUND**

Pediatric brain tumors are a diagnostic challenge given the variability in their presentation and their tendency to mimic more common diagnoses such as migraine or feeding intolerance. Because of this, there is significant literature on diagnostic delay in pediatric brain tumors, but no clear consensus on factors associated with these “delays”.

Our objective was to map the diagnostic pathway of pediatric patients diagnosed with brain tumors at the University of Wisconsin and assess for factors related to a longer period between presentation and definitive diagnosis.

**RESULTS**

- On average, definitive diagnosis of pediatric brain tumor required:
  - 2.7 contacts with the healthcare system
  - 0.7 specialist referrals
  - 2.7 months from first healthcare contact
- Only 15\% of cases were diagnosed at first healthcare contact
- Factors such as tumor location, presenting symptom and location of first contact contributed to varied efficiency in diagnostic work up

**CONCLUSIONS**

- No correlation between age and efficiency grade ($R = 0.0016$)
- Spine location was significantly associated with a less efficient diagnostic pathway when compared to both supratentorial and infratentorial location (Figure 3)
- 5 most common symptoms at first healthcare contact were: Headache (35), Nausea/Vomiting (28), Incoordination/Ataxia (17), Vision Changes (13) and Seizures (9)
- Seizures were associated with the most efficient diagnostic work up. Neck/Back Pain was associated with least efficient diagnostic work up.
- Initial presentation to PCP was associated with a significantly less efficient diagnostic work up when compared to initial presentation to the ED/Urgent care ($p=0.0079$)