PVM02CHEATSHEET

Benign Paroxysmal Vertigo of Childhood

Migraine-equivalent episodic vertigo — most common cause of recurrent dizziness under age 6

WHY IT MATTERS

BPVC is the most common cause of episodic vertigo in children under 6 and accounts for 18–30% of all paediatric dizziness presentations. It is a migraine spectrum disorder — approximately 50–70% of affected children develop migraine by adolescence. Misdiagnosis leads to unnecessary neuroimaging, anticonvulsant therapy, and prolonged family anxiety. Correct diagnosis requires only a careful history; investigations are normal by definition.

ICHD-3 DIAGNOSTIC CRITERIA

Criterion	Requirement
A — Episodes	At least 5 attacks meeting B–D
B — Vertigo	Sudden onset vertigo without warning; resolves spontaneously
C — Duration	Minutes (seconds to 5 minutes)
D — Symptoms	At least one of: nystagmus, ataxia, vomiting, pallor, fearfulness
E — Between attacks	Neurological exam normal; audiogram normal
F — Not attributed	Not better explained by another ICHD-3 diagnosis
Age range	Typically 2–5 years; resolves by 5–7 years in majority
Family history	Migraine in first-degree relative in >50% — strengthens diagnosis

DIFFERENTIAL DIAGNOSIS

Diagnosis	Distinguishing feature	Key test
Vestibular migraine (VM)	Older child; headache prominent; episodes >5 min; visual aura	Clinical criteria; no test
Posterior fossa tumour	Constant symptoms; ataxia; morning headache; vomiting	MRI brain urgently
Epilepsy (vertiginous seizure)	Brief; postictal phase; EEG changes; consciousness affected	EEG; neurology
BPPV in children	Position-triggered; Dix-Hallpike positive; older child	Dix-Hallpike
Cardiac arrhythmia	Loss of consciousness; pallor; ECG changes; no vestibular exam findings	ECG; Holter
Anxiety/psychological	Triggered by stress; hyperventilation; normal vestibular exam; older child	Clinical; PHQ-A
Posterior circulation TIA	Extremely rare in children; vascular risk factors; MRI-DWI	MRI-DWI — if atypical

INVESTIGATIONS — WHAT IS NEEDED

Test	Result in BPVC	Action if abnormal
Vestibular examination	Normal between attacks	Any abnormal finding = re-evaluate diagnosis
Audiogram	Normal	Abnormal hearing = consider syndromic cause; re-examine diagnosis
MRI brain	Normal — only needed if atypical features	Red flags present → MRI urgently
EEG	Normal — only if seizure disorder queried	EEG changes → epilepsy referral
Orthostatic BP	Normal	Postural drop = POTS; refer cardiology/autonomic
ECG	Normal	Arrhythmia → cardiology; exclude long QT

MANAGEMENT

Approach	Detail
Reassurance (first priority)	Explain migraine-spectrum diagnosis clearly; benign natural history; resolves by school age in majority
Lifestyle triggers	Identify and modify: sleep deprivation, hunger, dehydration, screen overuse, stress — same as migraine triggers
Acute attack management	Hold child; place in quiet dark environment; cool cloth; ondansetron 0.15 mg/kg if vomiting severe
Pharmacological prevention	Not routinely required; if attacks >2/week or severely disruptive: cyproheptadine 0.25 mg/kg/day — best evidence in BPVC
Migraine diary	Document frequency, duration, triggers, associated symptoms — guides treatment decisions
Headache neurology referral	If attacks increasing in frequency, changing character, or child developing migraine headaches alongside
Natural history counselling	60–70% resolve by age 7; 20–25% transition to vestibular migraine in adolescence; monitor at annual review

TRANSITION TO VESTIBULAR MIGRAINE — MONITORING

Feature	BPVC	Vestibular migraine
Age	Typically 2–5 years	5 years to adulthood
Episode duration	Seconds to 5 minutes	5 minutes to 72 hours
Headache	Absent or mild	Present in >50% of attacks; migraine quality
Nausea/vomiting	Prominent; pallor	Present; often severe
Vestibular exam	Normal between attacks	Normal between attacks; may have static imbalance during
Response to triptans	Not indicated	May abort episode; consider in adolescents
Natural history	Resolves by school age (majority)	Chronic; requires preventive therapy if frequent

KEY MANAGEMENT POINTS

- BPVC is a clinical diagnosis — normal investigations do not make it "proven"; they make structural causes less likely.
- Cyproheptadine is the most evidence-supported preventive agent in BPVC; start at 0.1 mg/kg/day and titrate.
- Avoid anticonvulsants: BPVC is not epilepsy; EEG may be slightly abnormal in migraine — this does not mean seizures.
- Annual review is recommended to monitor for transition to vestibular migraine or headache disorder.
- School communication: brief attacks in classroom are distressing but not dangerous — letter for school explaining the condition reduces teacher anxiety and unnecessary emergency responses.

PROGNOSIS AND LONG-TERM FOLLOW-UP

Aspect	Detail
Natural history	60–70% resolve by age 7; 20–25% transition to vestibular migraine by adolescence
Migraine transition risk factors	Positive family history; prolonged episode duration; female sex; onset >4 years
Annual review	Recommended until resolution or transition confirmed; headache diary review
BPVC → VM transition	Increase in episode duration >5 min; emergence of headache; change in character → reassess VM criteria
Cyproheptadine response	Expected 50% reduction in attack frequency within 4–6 weeks of adequate dosing; if no response at 6 weeks: reassess
School impact	Episodic absence during attacks; brief episodes rarely cause significant absenteeism if family educated

WHEN TO REFER

- **► Increasing frequency (>2 episodes/week) or severity — paediatric neurology; preventive therapy**
- **► Any abnormal neurological finding between attacks — MRI brain; neurology**
- **► Transition to longer episodes with headache — vestibular physician; VM criteria assessment**
- **► Attacks not resolving by age 7 — vestibular physician; re-evaluate diagnosis**
- **► Hearing loss detected on audiogram — paediatric ENT + audiology; re-evaluate diagnosis**

♦ The most valuable diagnostic tool in BPVC is a careful history — not imaging. A parent who describes a 3-year-old suddenly grabbing furniture, going pale, looking terrified for 30–60 seconds, then recovering completely and asking for a snack is giving you the diagnosis. Five such episodes with a normal exam and a family history of migraine = BPVC. No MRI required.

♦ Never label BPVC as "functional" or "behavioural" — the child is genuinely terrified during an episode because of an acute vestibular disruption, not because they are seeking attention. Misattribution to behavioural causes delays the correct diagnosis by years and causes enormous family distress. It is a migraine-variant with a recognised mechanism and a reassuring natural history.