

'Headspin hole': an overuse injury among breakdancers

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SUMMARY

This case report focuses on 'headspin hole', a unique overuse injury in breakdancers caused by repetitive headspins. It manifests as a fibrous mass on the scalp, hair loss and tenderness. The literature on this condition is limited. We present a detailed case report of a male breakdancer in his early 30s who developed a noticeable scalp protuberance over 5 years of extensive head-spinning practice. MRI showed significant subgaleal fibrosis and thickening of the subcutis, consistent with the 'cone-head sign'. The patient underwent successful surgical tumour removal, leading to aesthetic improvement and symptom relief. Histological analysis showed extensive fibrosis with no malignancy. Postoperative follow-up indicated high patient satisfaction and a significant reduction of the mass. This case underscores the importance of recognising chronic scalp conditions in breakdancers and suggests that surgical intervention can be an effective treatment.

BACKGROUND

Breakdancing involves a range of complex and physically demanding techniques that can apply strain to the body. The intricate nature of these movements renders breakdancers particularly prone to injuries, ranking in descending order of frequency as: wrist, finger, knee, shoulder, lower back, elbow, neck, ankle, foot and hip.¹ Predominant injuries consist of sprains, strains and tendinitis.^{1 2} In addition, there are documented cases of head and brain injuries, including reports of severe conditions such as subdural haematomas.^{3 4}

Prolonged breakdancing often leads to a collection of chronic afflictions known collectively as 'breakdancer overuse syndrome'. This encompasses conditions such as carpal tunnel syndrome, tenosynovitis, impingement syndrome, non-painful

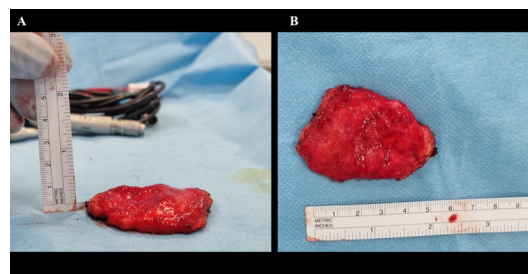


Figure 2 The fibrous tumour mass is shown on the operation table in two projections (A and B), with a ruler for reference.

chronic bumps on the back and head, continuous hair loss and persistent scalp irritation from headspins.⁵

A distinctive form of overuse injury to the scalp, resulting from repetitive head spinning, is identified as the 'headspin hole' or 'breakdancer overuse syndrome of the scalp'.⁶ It is characterised by hair loss, inflammation, numbness and sometimes formation of a lump on the scalp.⁷ In radiologic descriptions, the term 'cone-head sign' is used.⁷

The phenomenon is commonly known in the breakdancing community and is sometimes referred to as a 'breakdance bulge'. A German study surveyed 106 breakdancers and found that 60.4% of breakdancers experienced overuse injuries to the scalp because of headspins. Hair loss was observed in 31.1% of the cases, while 23.6% reported developing painless head bumps. Additionally, 36.8% suffered from scalp inflammation.⁵ A study of 142 breakdancers showed that those who engaged in headspin practice more than three times a week had a significantly higher incidence of hair loss.⁶

Publications regarding this condition are scarce. A search in the PubMed database yielded only three articles that mention the syndrome.

This case report represents a pioneering effort in detailing a clinical instance of 'headspin hole' including radiographic evidence, histopathological examination and the outcome following surgical intervention.

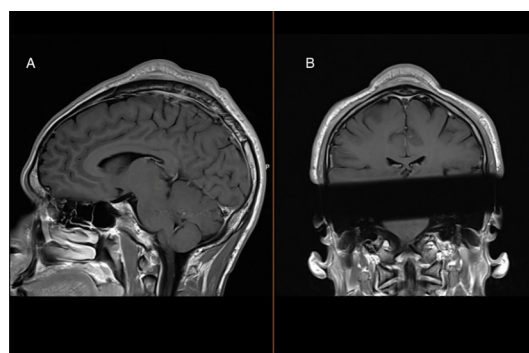


Figure 1 T1-weighted MRI with contrast of the tumour mass in sagittal (A) and coronal (B) planes.



Figure 3 Pictures showing the protuberance before the operation (A) and at follow-up 1 month after the operation (B).



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CASE REPORT

A man in his early 30s with no significant medical history was referred by his primary physician for evaluation of a tumour on the scalp which arose after extensive breakdancing training. The patient had engaged in various forms of headspin manoeuvres for over 19 years. His training regimen consisted of approximately five sessions per week, each lasting around 1.5 hours. During each session there was direct pressure applied to the vertex of the head for durations ranging from 2 to 7 min.

The patient had noted a protuberance on the scalp associated with hair loss. Over the last 5 years there had been a notable increase in its size and the onset of tenderness. The presence of the lesion and associated discomfort were aesthetically displeasing to the patient, but the protuberance had not hindered the patient from continuing his head-spinning activities.

On clinical examination, a longitudinally oriented mass was prominent at the vertex, along the midline. Palpation showed that the lesion was tender and the overlying skin was mobile, suggesting that the tumour was subgaleal. The rest of the cranial structure was well proportioned and without further anomalies. Possible differential diagnoses included cancer, benign tumour, atheroma, kerion, lipoma and epidermoid cyst.

MRI showed a subgaleal mass measuring 33.4 × 0.6 × 2.9 cm near the midline vertex, with vascular structures and enhancement similar to the galea, without any identifiable focal tumour volume. The skin and subcutaneous tissue were thickened superficial to the subgaleal mass. The thickness of the skull under the subgaleal mass was slightly increased compared with the surrounding skull areas (figure 1).

The treatment options were surgical intervention and/or steroid injections, which could potentially reduce the suspected inflammatory hypertrophy of the skin.

The patient was offered surgery where the primary goal was reduction of the protuberance and histological analysis. The patient was put under general anaesthesia. A curved incision was made from the coronal suture around the tumour and the fibrous tumour mass was dissected off the galea and skull (figure 2). The underlying hyperostotic skull was drilled down to the level of the surrounding bone. There were no perioperative or postoperative complications. Histological analysis showed non-specific reactive changes in the form of rather extensive fibrosis and no sign of malignancy.

OUTCOME AND FOLLOW-UP

Following surgery the patient attended a 1-month follow-up appointment. He expressed satisfaction with the procedure, noting a significant reduction in the protuberance (figure 3).

DISCUSSION

The literature on headspin holes is limited. Only one case report has been published on the subject regarding a man in his late 30s with a background in breakdancing. In the case report, a cone-shaped deformity at the top of the skull was identified. The individual underwent an MRI due to newly developed dizziness and ongoing nose bleeds that had persisted for several years. The patient received no treatment. At 6-month follow-up both the nose bleeds and dizziness had disappeared, the causes of which were unclear. The status of the tumour at the follow-up was not reported.⁷

The radiological findings of the case share several similarities with the case presented here. Both tumours were mainly placed at the vertex and show hypertrophy of the epicranial aponeurosis and the subcutaneous fibroadipose tissue.

Patient's perspective

My experience throughout the entire process at the neurosurgical department has been very good. I felt well treated and was received by professional people. It felt like everything was under control, and I was asked the same questions many times in the different departments to ensure that I had answered the important questions about chronic illnesses and allergies correctly. This made it feel like everything was well organised and that I was in good hands. The nurses were very professional, present and caring, especially on the day of the operation. They were good at explaining how everything would proceed and were excellent at calming my nerves. The surgeons were skilled, and the entire operation and process seemed like something they genuinely wanted to do, not just a job. They were very professional and passionate throughout the process.

The process from the beginning has been good, and I am very satisfied. The outcome is much better than how it looked before, and I am glad I had it done. I would choose to do it again if I had the choice.

It is now possible for me to go out in public without a cap/hat which is, of course, a very nice feeling. I have received a lot of positive feedback and people say it looks well done, that I have a nice scar, and that my overall appearance has improved significantly. Many say that they no longer notice that I have a bump and that my head looks completely normal.

I still have very thick skin on my head, which means I still have a slight elevation. My surgeon said I could be referred to a plastic surgeon if I was dissatisfied. However, this is not the case. I am very satisfied with the result and the entire process.

Learning points

- ▶ Despite 'headspin hole' being known within the breakdancing community, it is scarcely documented in the medical literature.
- ▶ Histopathological analysis showed no signs of malignancy in the scalp fibrous mass.
- ▶ Surgical treatment for 'headspin hole' in breakdancers appears to be a successful intervention.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

REFERENCES

- 1 Cho CH, Song KS, Min BW, et al. Musculoskeletal injuries in break-dancers. *Injury* 2009;40:1207–11.
- 2 McBride DQ, Lehman LP, Mangiardi JR. Break-dancing neck. *N Engl J Med* 1985;312:186.

- 3 Copperman SM. Two new causes of alopecia. *JAMA* 1984;252:3367b–367.
- 4 McNeil SL, Spruill WA, Langley RL, *et al.* Multiple subdural hematomas associated with breakdancing. *Ann Emerg Med* 1987;16:114–6.
- 5 Kauther M, Wedemeyer C, Kauther K, *et al.* Das ‘Headspin Hole’ bei Breakdancern – medizinische Erstbeschreibung eines häufigen Überlastungsschadens. *Sportverletz Sportschaden* 2009;23:52–3.
- 6 Hall M, Lim H, Kim S, *et al.* A Cross-Sectional Study Comparing Traumatic Alopecia Among B-Boys and B-Girls to Other Dance Styles and Its Impact on Dance Performance and Health. *J Dance Med Sci* 2023;27:13–9.
- 7 Korczynski M, Nguyen A, Snyder T. The “Cone-Head” sign: Magnetic resonance image findings of the “Headspin Hole”, an overuse injury found in breakdancers. *Radiol Case Rep* 2020;15:489–91.

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