

# A Rare Case of Hydatid Cyst of Posterior Neck: Case Report

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**Abstract:** *Hydatid cyst is a zoonotic disease commonly caused by the larval stage of Echinococcus granulosus. The involvement of the head and neck regions is an exceedingly rare phenomenon even in endemic geographical areas. It's a parasitic disease which humans can accidentally ingest through contaminated food. The neck is an uncommon site for this infection so it is not considered as a differential diagnosis of neck swelling commonly. We are reporting a rare case of 35 years old female, presented with complaints of left side posterior neck swelling for a duration of 4 months which was gradually increasing in size. Patient was investigated and diagnosed as a case of primary hydatid cyst of neck. After PAC clearance patient was successfully operated for complete excision of Hydatid Cyst. Post operative period uneventful. Patient discharged under satisfactory condition.*

**Keywords:** Hydatid cyst, Neck swelling, Echinococcus granulosos

## 1. Patient Information

A 35 years old housewife female presented to the hospital in Surgery OPD with complaints of swelling on the nape of neck at the left side for the duration of 4 months. The mass rapidly increasing in size during the last month. It was painless and not associated with any other swelling in the body.

## 2. Clinical Findings

After verbal consent, patient examined. On examination the swelling was firm to hard, non - tender, immobile located over the left side of posterior neck (occipital region). The swelling was of size approx. 5x5cm. There was no other swelling over body.

### Radiological Findings:

MRI of Neck shows the following findings: Well defined heterogeneous lesion in the left occipital and posterior cervical region centered in the intermuscular and muscular planes with imaging characteristics as described. Imaging findings are suggestive of a complex cystic lesion (likely a parasitic / hydatid cyst). No intraspinal extension.

### Laboratory Findings:

Lab investigations including complete blood count, renal function tests, thyroid function test and blood glucose were all within the normal range.

### Therapeutic Intervention:

After PAC clearance and informed consent, patient prepared for surgery. Under General Anaesthesia, Wide local Excision of the lesion was performed and the specimen was sent for which showed Hydatid Cyst with surrounding pericyst and no features suggestive of malignancy.

### Follow Up:

The patient was discharged from the hospital without any post operative complication on Day – 2. One month later she was found to be healthy and free from recurrence.

## 3. Discussion

Hydatid disease of the musculoskeletal system is rare with a reported incidence of about 1–5% [1, 2,]. It is a cyclozoonotic disease commonly caused by echinococcus granulosus which is endemic in the Middle East and South America region, and countries like India, Africa, and Turkey [3]. The infection is spread when food or water that contains the eggs of the parasite is ingested or by close contact with an infected animal. [4] The eggs are released in the stool of meat - eating animals that are infected by the parasite. [5] Commonly infected animals include dogs, foxes, and wolves. [5] For these animals to become infected they must eat the organs of an animal that contains the cysts such as sheep or rodents. [5] The type of disease that occurs in human patients when accidentally by oral ingestion of contaminated water and food with the tapeworm eggs or through direct contact with the definitive host [6]. The larvae of the tapeworm penetrate the wall of the bowel and reach the liver through the portal circulation, and then through hepatic veins reach the pulmonary circulation. Following the bypass of these two most common targeted organs, the tapeworm may lodge in other intra - and extra - abdominal organs; thus, every organ in the body is liable to be involved [7].

Some unusual locations of the disease include bone, particularly vascularized bone in up to 4% of cases, the kidneys (3%), the heart (2%), and the thyroid gland [8, 9]. Involvement of the neck is an extremely rare condition accounting for approximately 0.75% of all cases [12]. HC of the head and neck can be seen in all age groups, with the majority occurring among the younger age groups. Systemic dissemination through the lymphatic system is one of the plausible explanations for the occurrence of the disease in the neck [10].

The presentation of hydatid cyst in different regions of the neck has been reported, including the lateral cervical region, the submandibular gland, the parotid gland, the left side of the neck, the thyroid gland, and the submental region [ [11], [12], [13], [14], [15]]. In the current case, the cyst was located in the posterior neck just close to the occipital protuberance.

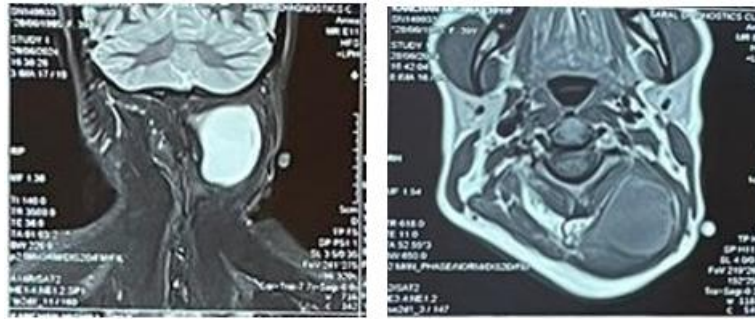


Figure 1 (a) 1.1 (b): MRI scan showing the precise location of the cyst

Diagnosis is usually by ultrasound though computer tomography (CT) or magnetic resonance imaging (MRI) may also be used. [4] Blood tests looking for antibodies against the parasite may be helpful as may biopsy. [1] The serological tests which are widely used to support the diagnosis include direct hemagglutination, immune electrophoresis, skin tests, and enzyme-linked immunosorbent assay [16]. The serological tests may provide laboratory diagnosis in up to 90% of the cases, but negative results cannot exclude the diagnosis [17]. Ultrasonography can detect the cystic nature of the mass and the presence of daughter cysts within the mass [18]. CT scan can be used to show the calcification of the wall of the cyst [18]. Ultrasonography has 90–95% sensitivity and specificity [18]. The presence of eosinophilia is not specific because it can be seen in all types of parasitic infections [19]. Due to the risk of rupture and anaphylactic shock, aspiration cytology is typically contraindicated [19]. However, some studies revealed only 1% risk of dissemination and anaphylactic shock with aspiration cytology [20]. The risk can be decreased by fine-needle aspiration which is now regarded as the gold standard diagnostic technique [18]. The diagnosis remained unknown until intraoperatively, the picture resembled that of a hydatid cyst. The histopathological examination of the specimen was compatible with the intra-operative finding.



Figure 3: Showing removal of the cyst in toto

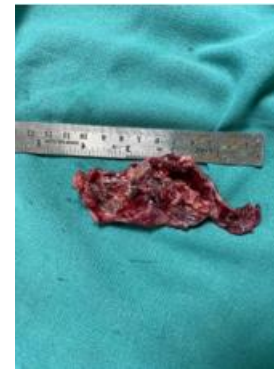


Figure 4: Pic showing gross specimen after resection

Surgical modalities like, cystectomy and capitonnage are the gold standard approaches to completely removing hydatid cysts. Administration of antiparasitic drugs pre- and post-operatively can decrease the chance of contamination and recurrence [21]. During the intra-operative period, it was found that the cystic lesion was, in fact, a hydatid cyst. Cystotomy and pericystectomy were performed, and the cyst was completely removed. Histopathological examination identified the specimen as a hydatid cyst.

A hydatid cyst of the neck is a very rare entity. It can be easily misdiagnosed. The possibility of the diagnosis should be suspected in cases with cyst-like lesions on imaging modalities to anticipate the proper management and prevent unnecessary complications.

#### 4. Conclusion

Asymptomatic non-tender soft tissue swelling of head and neck region with history of animal handling should have hydatid cyst as differential diagnosis in mind which may be primary or secondary. Treatment is surgical excision with albendazole coverage preoperatively at least for 1 month and postoperatively.

#### References

- [1] Sreeramulu PN, Krishnaprasad, Girish gowda SL. Gluteal region musculoskeletal hydatid cyst: case report and review of literature. *Indian J Surg*.2010; 72 (S1): 302–305. doi: 10.1007/s12262 - 010 - 0096 - 2. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
- [2] García - Díez AI, Ros Mendoza LH, Villacampa VM, Cózar M, Fuertes MI. MRI evaluation of soft tissue hydatid disease. *Eur Radiol*.2000; 10 (3): 462–466.

- doi: 10.1007/s003300050077. [PubMed] [CrossRef] [Google Scholar]
- [3] A. M. Salih, F. H. Kakamad, Z. D. Hammood, B. Yasin, D. M. Ahmed Abdominal wall Hydatid cyst: a review a literature with a Case report Int J Surg Case Rep, 37 (2017), pp.154 - 156
- [4] "Echinococcosis Fact sheet N°377". World Health Organization. March 2014. Archived from the original on 21 February 2014. Retrieved 19 March 2014
- [5] "Echinococcosis [Echinococcus granulosus] [Echinococcus multilocularis] [Echinococcus oligarthrus] [Echinococcus vogeli]". CDC. 29 November 2013. Archived from the original on 20 March 2014. Retrieved 20 March 2014.
- [6] R. A. Agha, T. Franchi, C. Sohrabi, G. Mathew, for the SCARE Group The SCARE 2020 guideline: updating consensus surgical case REport (SCARE) guidelines Int J Surg, 84 (2020), pp.226 – 230. View PDF View article Crossref View in Scopus Google Scholar
- [7] K. Oqbani, M. Chraïbi, N. Harchichi, S. Abbaoui Primary hydatid cyst of the neck: a rare and unusual site European Ann Otorhinolaryngology Head Neck Dis, 134 (2) (2017), pp.123 - 125
- [8] S. Mujtaba, N. Faridi, S. Haroon Primary hydatid cyst of the neck J Coll Phys Surg Pakistan, 23 (11) (2013), pp.811 - 812 View in Scop us Google Scholar
- [9] A. M. Salih, Z. Y. Abdulla, D. A. Mohammed, V. I. Jwamer, P. G. Ali, A. G. Hamasaeed, *et al.* Hydatid cyst of thyroid gland, a rare Case report with a literature review Int J Surg Case Rep, 67 (2020), pp.267 – 270 View PDF View article View in Scop us Google Scholar
- [10] A. El Bousaadani, L. Eljahd, M. Lezrag, M. Elfakiri, R. Abada Primary large hydatid cyst of the neck J Case Rep Stud, 3 (6) (2015), p.603 Google Scholar
- [11] F. García - Alvarez, J. Torcal, J. C. Salinas, A. Navarro, I. García - Alvarez, M. Navarro - Zorraquino, *et al.* Musculoskeletal hydatid disease: a report of 13 cases Acta Orthop Scand, 73 (2) (2002), pp.227 – 231. View in Scop us Google Scholar
- [12] P. P. Pal, S. Shankar Hydatid cyst in submandibular salivary gland Indian J Otolaryngol, 60 (2) (2008), pp.188 - 190 Crossref View in Scop us Google Scholar
- [13] H. Katılmış, S. Öztürkcan, İ. Özdemir, İ. A. Güvenç, Ş. Özturan Primary hydatid cyst of the neck Am J Otolaryngol, 28 (3) (2007), pp.205 - 207.
- [14] Darabi, P. Varedi, A. R. Mohebi, S. Mahmoodi, P. Varedi, S. A. Nabavizadeh, *et al.* Hydatid cyst of the parotid gland Oral Maxillofac Surg, 13 (1) (2009), pp.33 - 35 View at publisherCrossrefView in ScopusGoogle Scholar
- [15] J. Kumar, J. Chacko, S. Sen Submental primary hydatid cyst: a rare differential diagnosis of midline neck swelling in children
- [16] S. Avcu, Ö. Ünal, Ç. Kotan, M. Öztürk, Ö. Özen Submandibular and thyroid gland involvement of hydatid cysts: a very rare association with percutaneous treatment Diagn Interventional Radiol, 16 (3) (2010), p.251
- [17] H. Katılmış, S. Öztürkcan, İ. Özdemir, İ. A. Güvenç, Ş. Özturan Primary hydatid cyst of the neck Am J Otolaryngol, 28 (3) (2007), pp.205 - 207 18. A. M. Salih, F. H. Kakamad, Z. D. Hammood, B. Yasin, D. M. Ahmed Abdominal wall Hydatid cyst: a review a literature with a Case report Int J Surg Case Rep, 37 (2017), pp.154 - 156
- [18] K. Oqbani, M. Chraïbi, N. Harchichi, S. Abbaoui Primary hydatid cyst of the neck: a rare and unusual site European Ann Otorhinolaryngology Head Neck Dis, 134 (2) (2017), pp.123 - 125
- [19] H. Katılmış, S. Öztürkcan, İ. Özdemir, İ. A. Güvenç, Ş. Özturan Primary hydatid cyst of the neck Am J Otolaryngol, 28 (3) (2007), pp.205 - 207
- [20] M. Hui, A. Tandon, A. K. Prayaga, S. Patnaik Isolated musculoskeletal hydatid disease: diagnosis on fine needle aspiration and cell block J Parasit Dis, 39 (2) (2015), pp.332 - 335
- [21] H. O. Baba, A. M. Salih, H. O. Abdullah, H. A. Hassan, R. K. Ali, R. Q. Salih, *et al.* Primary hydatid cyst of the posterior neck; a case report with literature review Int J Surg Open, 40 (2022), Article 100449