Giant Hydatid Lung Cyst

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A 19-year-old Bedouin woman was admitted to our medical center with a 2-year history of chest pain combined with dyspnea. She was exposed to sheep and dogs during childhood. In addition, she described a right upper quadrant abdominal pain, which lasted for 2 months. An abdominal ultrasound scan showed a large abdominal cyst, and she was referred to a hospital for further evaluation.

On admission she complained of right upper quadrant pain and had a fever of 38.3°C. Blood results showed elevated white blood cell count and elevated liver enzymes, mostly cholestatic enzymes.

A chest X-ray and computed tomography (CT) scan performed on presentation showed a large cyst in the right hemithorax that was 11×15 centimeters in size. The cyst, which caused almost full collapse of the right lung, showed a left shift of the mediastinum combined with pressure on the inferior vena cava [Figure 1, Figure 2, Figure 3]. In addition, the CT scan showed right moderate pleural effusion. The cyst was suspected to be a hydatid cyst according to imaging features, and the patient was treated with albendazole.

The patient was discharged a few days later with a scheduled date for surgery. A few days later, the seorological test was found to be positive for echinococcosis antibodies. During the subsequent surgery, a complete resection was performed, and a few days later the patient was discharged with albendazole treatment prescribed for one more month.

Echinococcal disease is caused by an infection with the tapeworm echinococcus. The highest rates of cystic echinococcal endemic disease tend to occur in areas where sheep are raised, like the Bedouin community in southern Israel. The disease is passed to humans via fecal–oral transmission.

The most common sites of hydatid cysts are the liver (50–70%), lungs (5–40%), muscles (5%), bones (3%), kidneys (2%), spleen (1%), and brain (1%) [1].

Although most infections are asymptomatic, most cysts grow slowly and are unnoticed for years until acute complications occur, such as cyst rupture that may present with coughing, chest pain, or hemoptysis [2]. If left untreated, more than 90% of the patients will die within 10 years of the onset of the clinical symptoms, and all patients will die within 15 years.

Diagnosis is based on imaging and serology in most cases; however, there are also seronegative cases [3]. Surgery is still the main therapeutic option to remove the cyst, followed by prolonged antiparasitic therapy [4].

Our case emphasizes how large a cyst can grow to if there is a delay in presentation and symptoms. We managed to surgically successfully remove the cyst from our patient without any complications and she was discharged with good and stable vital signs and

Figure 1. X-ray of patient with giant hydatid lung cyst

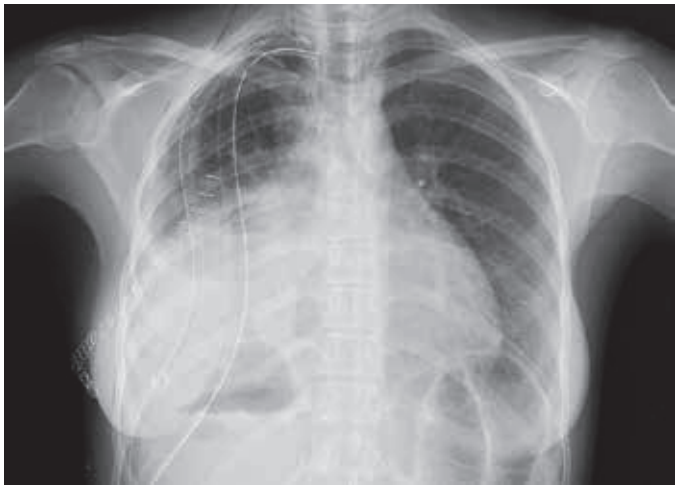
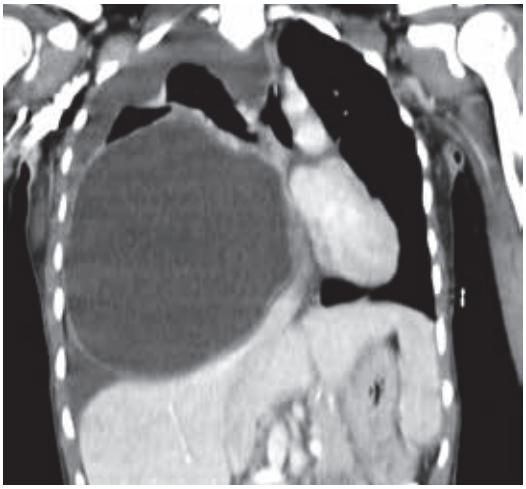


Figure 2. Computed tomography frontal view of patient with giant hydatid lung cyst



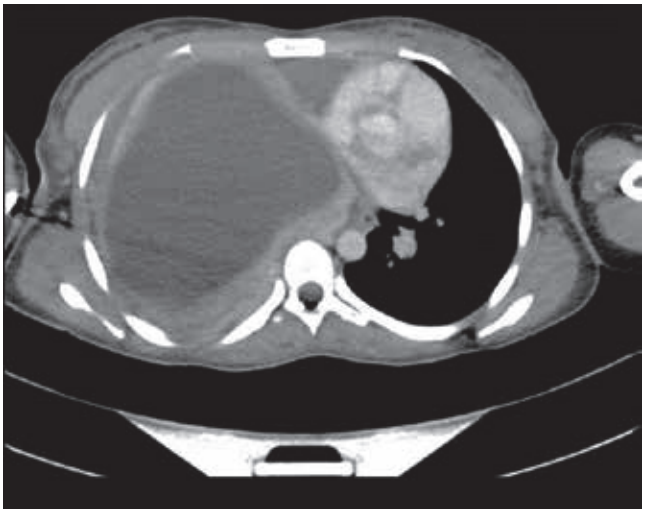


Figure 3. Computed tomography transversal view of patient with giant hydatid lung cyst

a recommendation to continue antiparasitic albendazole treatment for one month.

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Capsule

Genetic roots of multiple sclerosis

The genetics underlying who develops multiple sclerosis (MS) have been difficult to work out. Examining more than 47,000 cases and 68,000 controls with multiple genome-wide association studies, the **International Multiple Sclerosis Genetics Consortium** identified more than 200 risk loci in MS. Focusing on the best candidate genes, including a model of the major histocompatibility complex region, the authors identified statistically independent effects at the genome level. Gene expression studies detected that every major immune cell type is enriched for MS susceptibility genes and that MS risk variants are enriched in brain-resident immune cells, especially microglia. Up to 48% of the genetic contribution of MS can be explained through this analysis.

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Capsule

Hydroxychloroquine blood levels predict hydroxychloroquine retinopathy

In 2016, the American Academy of Ophthalmology (AAO) changed the recommended dosing of hydroxychloroquine from 6.5 mg/kg to less than 5 mg/kg. However, it is not clear that the lower prescribed dose of hydroxychloroquine had the same efficacy for systemic lupus erythematosus (SLE) activity or the same protective role against cardiovascular risk factors and thrombosis. **Petri** et al. addressed the frequency of hydroxychloroquine retinopathy and the role of hydroxychloroquine blood levels to identify those at greater future risk of retinopathy. The authors repeatedly assessed 537 SLE patients in a large clinical cohort for hydroxychloroquine blood levels and tested for hydroxychloroquine retinopathy. The authors assessed the risk of retinopathy by clinical characteristics and levels of hydroxychloroquine in the blood. The overall frequency of retinopathy was 4.3% (23/537). There was 1% risk of retinopathy in the first 5 years, 1.8% from 6 to 10 years, 3.3% from 11 to 15 years, 11.5% from 16 to 20 years, and 8.0% after 21 years of use. They found that older patients ($P < 0.0001$), higher body mass index ($P = 0.0160$ for trend), and longer duration of hydroxychloroquine intake ($P = 0.0024$ and $P = 0.0006$ for trend) were associated with higher risk of hydroxychloroquine toxicity. Higher hydroxychloroquine blood levels predicted later hydroxychloroquine retinopathy ($P = 0.0124$ and $P = 0.0340$ for mean and maximum HCQ blood levels, respectively). These data prove the utility of hydroxychloroquine blood levels in predicting retinopathy. This would allow clinicians to either decrease dose or increase monitoring in those with high blood levels.

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