

## Reverse halo sign

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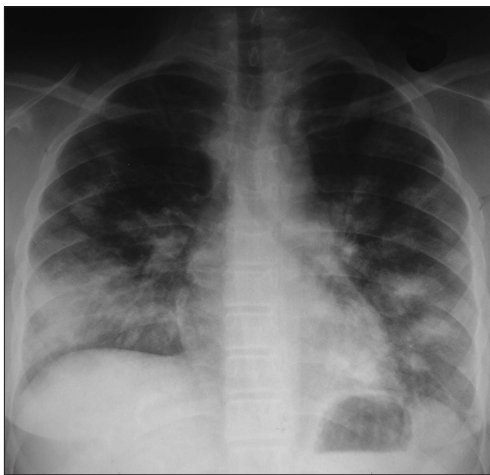
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A 14-year-old female patient presented with fever associated with dry cough of 8 months duration. There was no history of hemoptysis, wheezing, chest pain, loss of weight, or loss of appetite. Sputum smears for acid-fast bacilli were negative.

The posteroanterior chest radiograph [Figure 1] showed multiple confluent alveolar opacities in both lungs with lower zone predominance. High-resolution computed tomographic (HRCT) scan of the thorax demonstrated multifocal variable-sized nodular opacities, and many of the nodular and consolidated areas showed central lucency or central ground-glass opacity [Figure 2]. There was no mediastinal lymph node enlargement.

Computed tomography (CT)-guided biopsy confirmed the diagnosis of cryptogenic organizing pneumonia (COP).

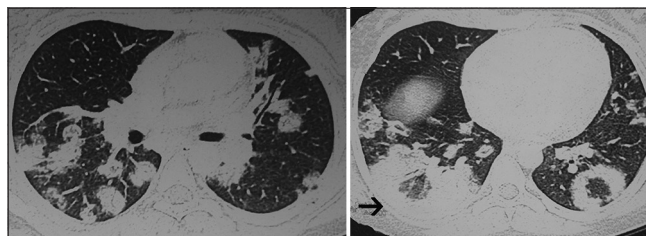


**Figure 1:** Chest radiograph showing multiple bilateral ill-defined alveolar opacities with consolidation in bilateral lower zones

The patient was started on treatment with oral prednisolone and had complete clinical and radiological improvement [Figure 3].

### QUESTION

Can you identify the radiological sign on HRCT?



**Figure 2:** HRCT of the thorax showing multiple variable-sized nodular opacities with most of them demonstrating central lucency or central ground-glass opacity



**Figure 3:** Chest radiograph showing complete resolution of the radiographic abnormalities after treatment with prednisolone

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## ANSWER

### Reverse halo sign

Reverse halo sign is also known as “atoll sign,” “fairy ring sign,” and “reversed halo sign.”<sup>[1]</sup> This sign refers to HRCT appearance of central lucency or central ground-glass opacity surrounded by denser air-space consolidation of crescentic and/or ring shape. The first description of this radiological sign was made in COP. It is seen in approximately 20% of patients with COP.<sup>[2]</sup> On radiological histopathologic correlation in patients with COP, the ground-glass opacity corresponds to inflammation of the alveolar septae and the rim of peripheral consolidated areas corresponds with features of organizing pneumonia.<sup>[2]</sup>

Although this sign is most commonly associated with COP, it is important to remember that it is not specific to COP and has infrequently been described in association with other conditions like pulmonary infarction, pulmonary fungal infections, pneumocystis pneumonia, Wegener’s granulomatosis, sarcoidosis, following radiofrequency ablation of lung nodule, bacterial pneumonia, lymphomatoid granulomatosis, nonspecific interstitial pneumonia, tuberculosis, and post radiation therapy.<sup>[1,3]</sup> Therefore, interpretation of this radiological

sign must be done in conjunction with the clinical profile. A tissue diagnosis can be obtained in patients with atypical clinico-radiological features to ensure appropriate treatment.<sup>[4]</sup> In our patient, a biopsy was performed in view of the younger age and absence of features to suggest a connective tissue disorder. In a female patient with known connective tissue disorder, if classical radiological features suggestive of COP are present, a biopsy is usually not required.

## REFERENCES

1. Walker CM, Mohammed TL, Chung JH. Reversed halo sign. *J Thorac Imaging* 2011;26:W80.
2. Kim SJ, Lee KS, Ryu YH, Yoon YC, Choe KO, Kim TS, et al. Reversed halo sign on high-resolution ct of cryptogenic organizing pneumonia: Diagnostic implications. *AJR Am J Roentgenol* 2003;180:1251-4.
3. Hong SH, Kang EY, Shin BK, Shim JJ. Reversed halo sign on thin-section ct in a patient with non-specific interstitial pneumonia. *Br J Radiol* 2011;84:e103-5.
4. Otera H, Tada K, Sakurai T, Hashimoto K, Ikeda A. Reversed halo sign in pneumocystis pneumonia: A case report. *BMC Med Imaging* 2010;10:26.

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