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CLINICAL IMAGE

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Intrapleural findings of pulmonary light-chain deposition disease

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Key message

Light-chain deposition disease is accompanied not only by characteristic CT findings but also by characteristic gross findings of the visceral pleura. Medical thoracoscopy could diagnose LCDD by the findings of the thoracic cavity.

KEYWORDS
light-chain deposition disease, rare lung disease, thoracoscopy

CLINICAL IMAGE

Light chain deposition disease (LCDD) is a rare multisystem disorder characterized by deposition of monoclonal light chains in any organ, with almost invariable renal involvement, but potential pulmonary involvement.

A 70-year-old male underwent left upper lobectomy and lymph node dissection for squamous cell carcinoma of the lung. Although no pleural nodules were identified preoperatively, thoracotomy revealed numerous 1–3 mm nodules on the lung surface. These nodules were found in the visceral pleura but there were no nodules in the parietal pleura (Figure 1, Video 1). The postoperative pathological diagnosis of the nodules was LCDD (Figure 2). Computed tomography (CT) retrospectively showed small nodules mimicking pleural dissemination (Figure 3) and small cysts with vessels

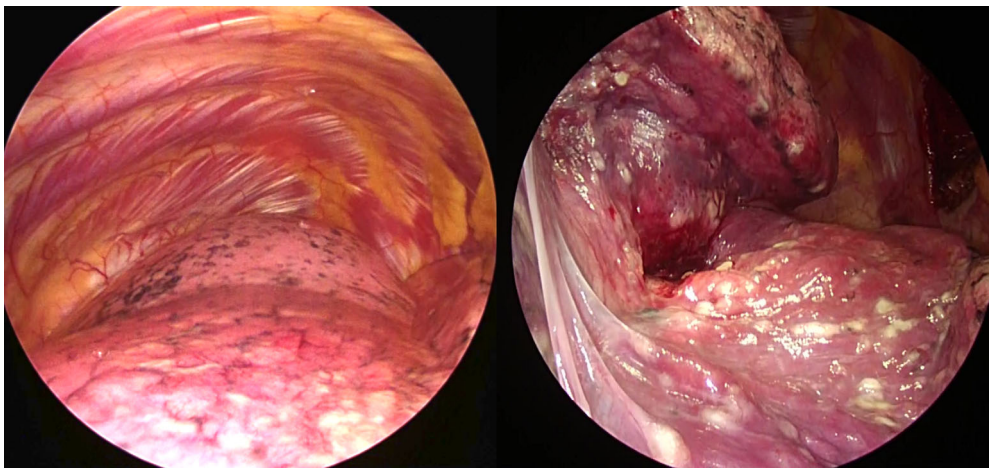
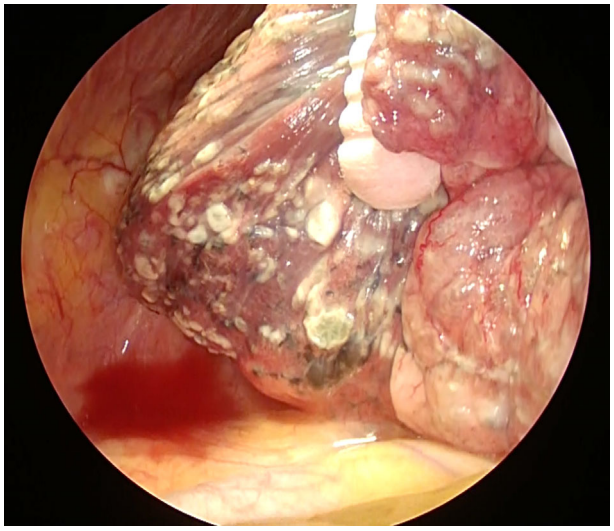


FIGURE 1 Intraoperative findings. There were multiple white nodules observed on the visceral pleura, while no significant findings were observed on the parietal pleura.



VIDEO 1 Surgery video showing the uneven distribution of white nodules.
Video content can be viewed at https://onlinelibrary.wiley.com/doi/10.1002/rcr2.1166

in the wall and central traversing vessels that are features of pulmonary LCDD[1] (Figure 4).

The patient had been diagnosed with chronic kidney disease, attributed to hypertensive nephropathy, 2 years prior to surgery, with progression to stage G4 at the time of surgery, and to dialysis 1 year post-surgery. Earlier recognition of chest CT findings suggestive of pulmonary LCDD, followed by investigation such as medical thoracoscopy, may have enabled earlier diagnosis and treatment of renal involvement by LCDD.

AUTHOR CONTRIBUTIONS

Takashi Yamashita conceived this case presentation and drafted the manuscript. Takashi Yamashita, Yuta Matsubayashi, Kiyomichi Mizuno, and KA participated in the design of this case presentation and in the acquisition, analysis and interpretation of data. Takashi Yamashita, Kensuke Takei, and Katsuyuki Asai participated in the treatment of the patient. All authors read and approved the final manuscript.

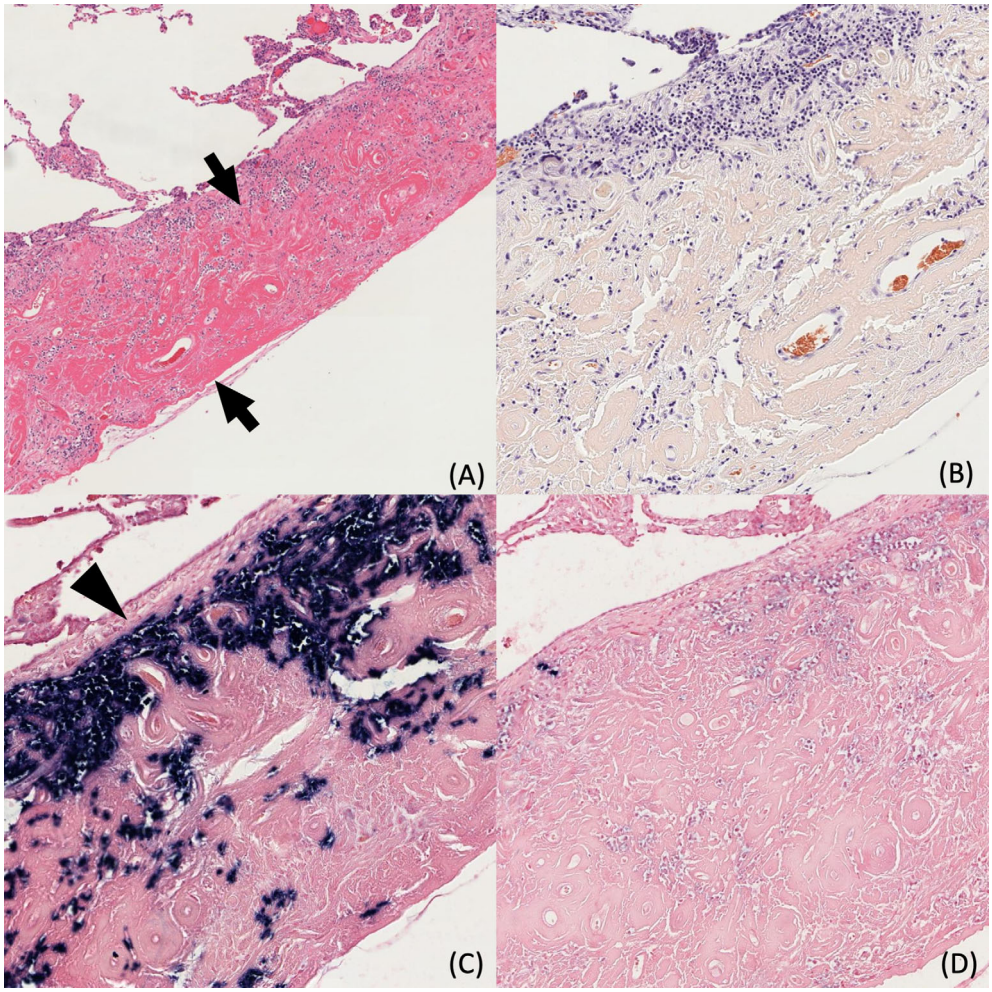


FIGURE 2 Histopathological images of the pleural nodule. (A) HE staining revealed amyloid-like eosinophilic deposits (black arrow). (B) Congo red staining was negative. (C) In situ hybridization of kappa light chains showed abundant expression (black arrow head). (D) In situ hybridization of lambda light chains showed slight expression.

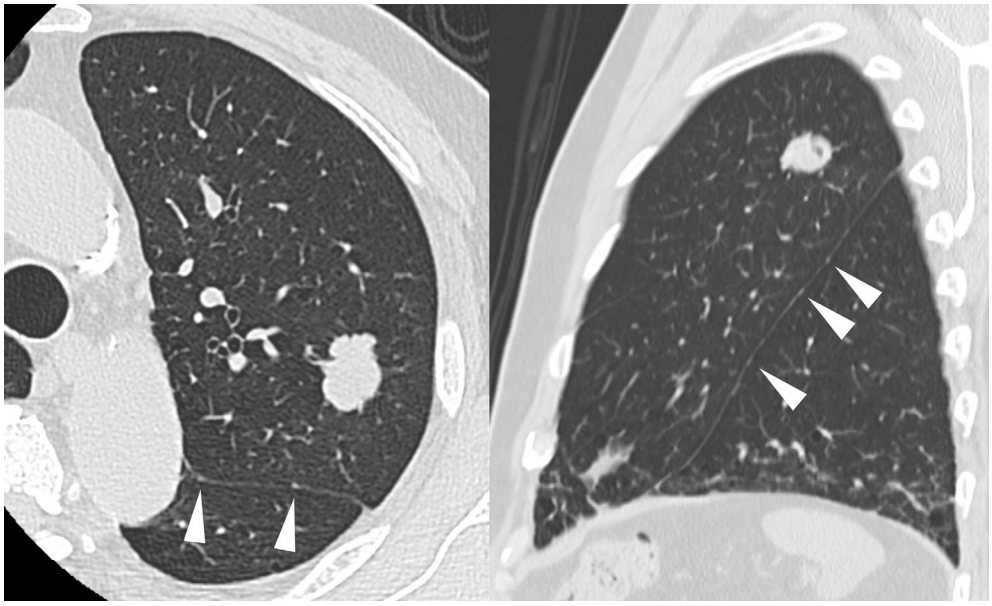


FIGURE 3 CT images showing small nodules mimicking pleural dissemination. There were white nodules observed on the interlobar pleural surface (white arrow heads). They appear smaller than true metastatic nodules.

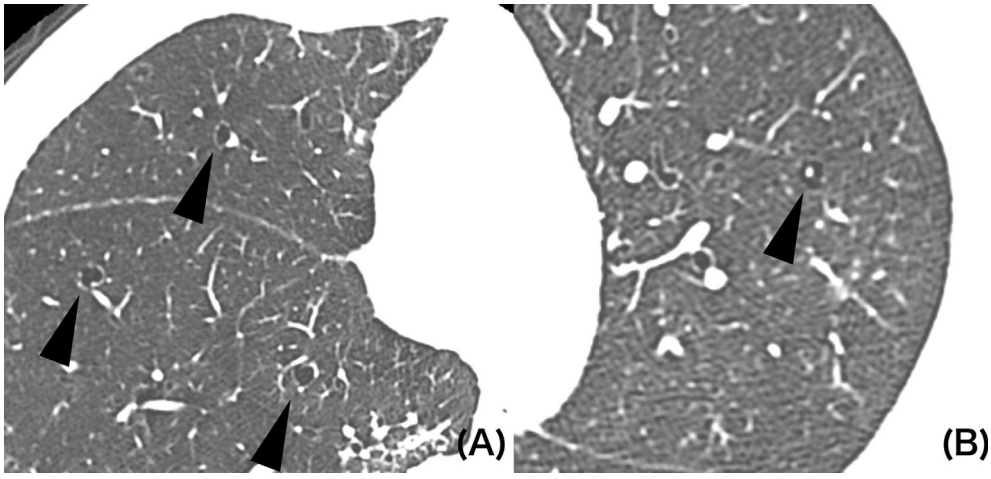


FIGURE 4 CT showing small cysts with features of pulmonary LCDD. Cyst with vessels within the cyst wall (A) and cyst with a traversing vessel (B) are characteristic findings in LCDD, and both were observed in this case (black arrow heads).

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

ETHICS STATEMENT

The authors declare that appropriate written informed consent was obtained for the publication of this manuscript and accompanying images.

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