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Case Report: Severe bronchiectasis in three kittens with detection of *Mycoplasma felis*: radiographic and computed tomography findings

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Bronchiectasis, a congenital or acquired condition, is rarely described in kittens. The following case series reports the radiographic and computed tomography (CT) findings in three kittens (aged less than 6 months) presenting with severe bronchiectasis and concurrent detection of *Mycoplasma felis*. Medical records, thoracic radiographs, and CT scans were reviewed. Radiographic and CT examinations were independently assessed for the distribution and type of bronchiectasis, airway content, pulmonary changes (atelectasis, hyperinflation, consolidation, bronchial wall thickening), pleural abnormalities (pleural effusion, pleural thickening, and pneumothorax), and lymphadenopathy. Interstitial pattern was assessed on thoracic radiographs, whereas ground-glass attenuation and mosaic attenuation were assessed on CT images. Bronchiectasis was classified as cylindrical, varicose, or saccular. Varicose bronchiectasis was identified in the three kittens (3/3) by radiography and CT. Saccular bronchiectasis was detected in one kitten on radiographs and in two kittens on CT scans, whereas cylindrical bronchiectasis was not identified by either imaging modality. Lesions mainly affected a single hemithorax and primarily involved the caudal lung lobes. Moderate to severe atelectasis was consistently present in affected lobes, with compensatory hyperinflation of the contralateral lung in all cases. CT provided additional diagnostic information compared with radiography, particularly for the detection and characterization of bronchial content and lymphadenopathy. *Mycoplasma felis* was detected in all kittens by quantitative polymerase chain reaction (qPCR). Histopathological findings, available in two of the three kittens, supported the diagnosis of bronchiectasis.

KEYWORDS

bronchiectasis, computed tomography, kitten, *Mycoplasma felis*, radiography

1 Introduction

Bronchiectasis is defined as an irreversible dilatation of the bronchial tube (1–4). Three types of bronchiectasis have been described in human medicine (4) and have subsequently been adopted in veterinary medicine (1–3): cylindrical (smooth dilatation),

varicose (beaded dilatation), and cystic (saccular dilatation). Among these, the cylindrical form of bronchiectasis appears to be the most frequently reported type in both dogs and cats (2).

Bronchiectasis can result from acquired or congenital processes (2, 3, 5). In cats, congenital bronchial anomalies are rare, with only a few reports describing conditions such as bronchial dysgenesis or ciliary defects (6, 7). To the authors' knowledge, cases of bronchiectasis in kittens have not previously been reported in the scientific literature.

Mycoplasma felis is frequently detected in the feline respiratory tract, but its pathogenic role remains debated. Although it has been associated with upper respiratory tract disease, it can also be identified in clinically healthy cats, suggesting possible commensal carriage (8). In the lower respiratory tract, its role is less clear, as no consistent association with disease has been demonstrated and its presence may be incidental (9). Nevertheless, a recent study has reported an association between the detection of *M. felis* and neutrophilic inflammation as well as radiographic alveolar lesions. However, this relationship may be causal, consequential, or simply reflect a shared underlying process (8).

Chronic airway inflammation, regardless of its origin, may contribute to bronchial wall damage and subsequent bronchiectasis (1, 10). Infectious agents, including *M. felis*, could therefore play a role in this process, although a direct causal relationship has not been established.

The aim of this case series was to describe the radiographic and CT findings in kittens under 6 months of age diagnosed with bronchiectasis and concurrent detection of *Mycoplasma felis*.

2 Materials and methods

Firstly, medical records and all available thoracic radiographic and CT examinations of three kittens diagnosed with bronchiectasis were retrospectively reviewed from the archives of the Liège University Veterinary Clinic. Extracted data included signalment (breed, sex, neuter status, age), clinical history, physical examination findings, hematology and biochemistry results, and findings of endoscopy, post-mortem examination, and histopathology.

Thoracic radiographs were obtained using either a direct or computed digital radiography system (Musica DR 14s or CR35x; Agfa-Gevaert Group, Mortsel, Belgium) combined with a Flexmed 90x X-ray table (General Electric CGR). Three standard projections (dorsoventral or ventrodorsal and both lateral views) were acquired for each case. Thoracic CT was performed under general anesthesia with endotracheal intubation, with the animals positioned in sternal recumbency.

Thoracic CT examinations were performed using two different multidetector CT scanners. Case 1 was examined using a 64-slice CT scanner (Somatom Confidence 64; Siemens Healthineers) whereas cases 2 and 3 were examined using a 16-slice CT scanner (Somatom Sensation 16; Siemens Healthineers).

For Case 1, CT acquisition parameters included 100 kVp, variable tube current using automated tube current modulation, a gantry rotation time of 0.5 s, a pitch factor of 0.8, and a detector collimation width of 0.6 mm. Image datasets were reconstructed

using a 114-mm field of view, a 512×512 matrix, and a slice thickness of 1 mm, with both medium-soft tissue and pulmonary reconstruction kernels.

For Cases 2 and 3, CT acquisition parameters included 120 kVp, variable tube current using automated tube current modulation, a gantry rotation time of 0.5 s, a pitch factor of 1.15, and a detector collimation width of 0.75 mm. Image datasets were reconstructed using a 108-mm field of view, a 512×512 matrix, and a slice thickness of 1 mm, with both medium-soft tissue and pulmonary reconstruction kernels.

In all cases, intravenous contrast medium was administered using iopromide (Ultravist® 300 mgI/mL; Bayer) at a dose of 2 mL/kg via manual intravenous injection and acquisition was obtained 1 to 3 min after injection.

For each CT study, two separate acquisitions were obtained, one during the inspiratory phase and one during the expiratory phase. Animals were mechanically ventilated using a pressure-controlled ventilation mode (peak inspiratory pressure of 10 cmH₂O and positive end expiratory pressure of 3 cmH₂O). Prior to image acquisition, mild hyperventilation was performed by increasing the respiratory rate to achieve an end-tidal CO₂ of approximately 35 mmHg, followed by an apnoeic pause. Inspiratory scans were acquired during a breath-hold with a sustained airway pressure of 15 cmH₂O by partially closing the adjustable pressure-limiting (APL) valve, whereas expiratory scans were obtained during an apnoeic pause with the APL valve open.

All imaging studies were reviewed using dedicated software (Impax version 8.1.2, Agfa HealthCare NV, Mortsel, Belgium) by a second-year resident of the European College of Veterinary Diagnostic Imaging (ECVDI) and an ECVDI board-certified radiologist.

Location of the affected pulmonary lobe and morphological type of bronchiectasis were determined after examination of thoracic radiographs and CT images. Bronchiectasis was classified as cylindrical, varicose, or saccular according to the morphology of bronchial dilatation (Figure 1). Cylindrical bronchiectasis was defined as a uniform bronchial dilatation with minimal tapering, varicose bronchiectasis as an irregular beaded dilatation with alternating areas of narrowing and widening, and saccular bronchiectasis as focal or diffuse cystic dilatation of the bronchi (1–4).

Bronchial luminal content was assessed on both CT and thoracic radiographs as present or absent and was further characterized on CT as foamy (mixed air- and soft tissue-attenuating material producing a bubbly appearance), partially filled with soft tissue-attenuating material, or completely filled with soft tissue-attenuating material. The term “soft tissue-attenuating material” was used to include mucus, cellular debris, inflammatory exudate, fluid, as these components could not be distinguished reliably on imaging alone.

Additional imaging findings assessed on radiography and CT included pulmonary parenchymal abnormalities such as atelectasis, hyperinflation, consolidation, and bronchial wall thickening. A radiographic interstitial pattern was assessed on thoracic radiographs, whereas ground-glass attenuation and mosaic attenuation were assessed on CT images. Pleural abnormalities (pleural effusion, pleural thickening, or pneumothorax) and thoracic lymphadenopathy were also recorded. Thoracic lymph

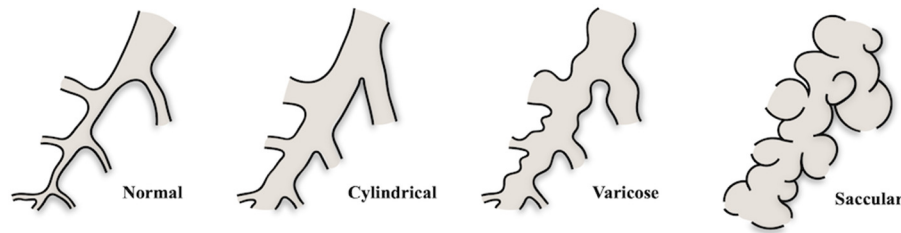


FIGURE 1

Schematic representation of the morphological classification of bronchiectasis. From **left to right**: normal bronchus, cylindrical bronchiectasis, varicose bronchiectasis, and saccular (cystic) bronchiectasis. Adapted from Radiopaedia: Bronchiectasis (<https://radiopaedia.org/articles/bronchiectasis>).

nodes, including the tracheobronchial, sternal, and cranial mediastinal lymph nodes, were evaluated on CT and radiographic images. Lymph node enlargement was assessed subjectively by the reviewers. Objective size thresholds were not applied because normative reference values for thoracic lymph node dimensions in kittens younger than 6 months of age have not been defined in the veterinary literature.

3 Case description

3.1 Case 1

A 4.5-month-old British Shorthair kitten was presented with expiratory dyspnea, fever, and exercise intolerance, which had been present since 8 weeks of age and was refractory to treatment with clindamycin (Antirobe, 11 mg/kg orally twice daily for 3 weeks) and fenbendazole (Panacur, 50 mg/kg orally once daily for 5 days). A complete blood count and biochemistry analyses were performed and revealed mild neutropenia ($1600/\mu\text{L}$; reference interval [RI], $1700\text{--}11900/\mu\text{L}$) and hyperphosphatemia (8.3 mg/L , RI, $3.5\text{--}6.3$), the other results being within normal range.

The patient underwent thoracic radiography, thoracic CT, and respiratory endoscopy for diagnostic evaluation.

Thoracic radiographs (Figures 2A, B) revealed marked increased opacity and volume loss of the right lung lobes with right-sided mediastinal shift, consistent with extensive atelectasis and consolidation of the right lung lobes. Severe bronchiectasis involving the right middle and right caudal bronchi was identified and presented a varicose and saccular appearance with diameters reaching up to 1 cm. Additional findings included compensatory hyperinflation of the left caudal lung lobe and pulmonary arterial dilation.

To summarize, the key radiographic findings for Case 1 were severe right-sided bronchiectasis involving the right middle and right caudal bronchi, extensive right lung lobe atelectasis, ipsilateral mediastinal shift, compensatory hyperinflation of the left caudal lung lobe, and pulmonary arterial dilation.

Based on these findings, the main differential diagnoses included congenital airway abnormalities, primary ciliary dyskinesia, and chronic or recurrent lower respiratory tract infection. In addition, based on radiographic findings alone, an obstructive lesion such as a pulmonary abscess, granuloma, or

another mass lesion causing bronchial obstruction could not be excluded.

CT imaging permitted the assessment of the extent and severity of bronchiectasis as well as the evaluation of the bronchial lumen and its contents. Moreover, investigation of potential underlying obstructive lesions was possible. The results of CT imaging also helped determine whether a surgical treatment option could be considered.

Thoracic CT (Figure 3A) revealed severe generalized bronchiectasis affecting all lung lobes except the left caudal lobe. The right caudal lobar bronchus showed marked saccular bronchiectasis, whereas multifocal varicose bronchiectasis was identified in the right cranial, right middle, right accessory, and left cranial lung lobes. The right caudal lobar bronchus exhibited a marked reduction in diameter between inspiratory and expiratory acquisitions (58% decrease in diameter), consistent with bronchomalacia (Figure 3B). Severe volume loss and near-complete consolidation affected all right lung lobes, resulting in ipsilateral displacement of the cardiac silhouette and carina. Complete consolidation was also present in the left cranial lung lobe. The left caudal lobe exhibited hyperinflation with mild diffuse ground-glass attenuation and a focal area of consolidation associated with an obliterated bronchus. Several bronchi contained foamy intraluminal material. Pulmonary arterial dilation was also observed. Mild enlargement of the thoracic lymph nodes was noted, with the sternal lymph nodes measuring up to 5 mm in thickness and the tracheobronchial and cranial mediastinal lymph nodes measuring up to 4 mm in thickness. Given the concurrent pulmonary abnormalities, the lymphadenopathy was considered consistent with a reactive process secondary to chronic airway and pulmonary disease.

The CT findings supported the initial radiographic differential diagnoses of congenital airway disease and chronic or recurrent lower respiratory tract infection, while the presence of an obstructive mass became much less likely.

Bronchoscopy confirmed bronchiectasis and bronchomalacia, the right lung being the most affected, and revealed abundant mucopurulent secretions. Cytological examination of bronchoalveolar lavage fluid showed marked neutrophilic inflammation. Bacterial culture was negative. Quantitative PCR testing of bronchoalveolar lavage fluid was positive for *Mycoplasma felis* (cycle threshold [Ct] = 21.6) and negative for *Bordetella bronchiseptica*, *Mycoplasma gateae*, *Aelurostrongylus abstrusus*, *Chlamydophila felis*, *Feline herpesvirus-1*, and *Feline calicivirus*.

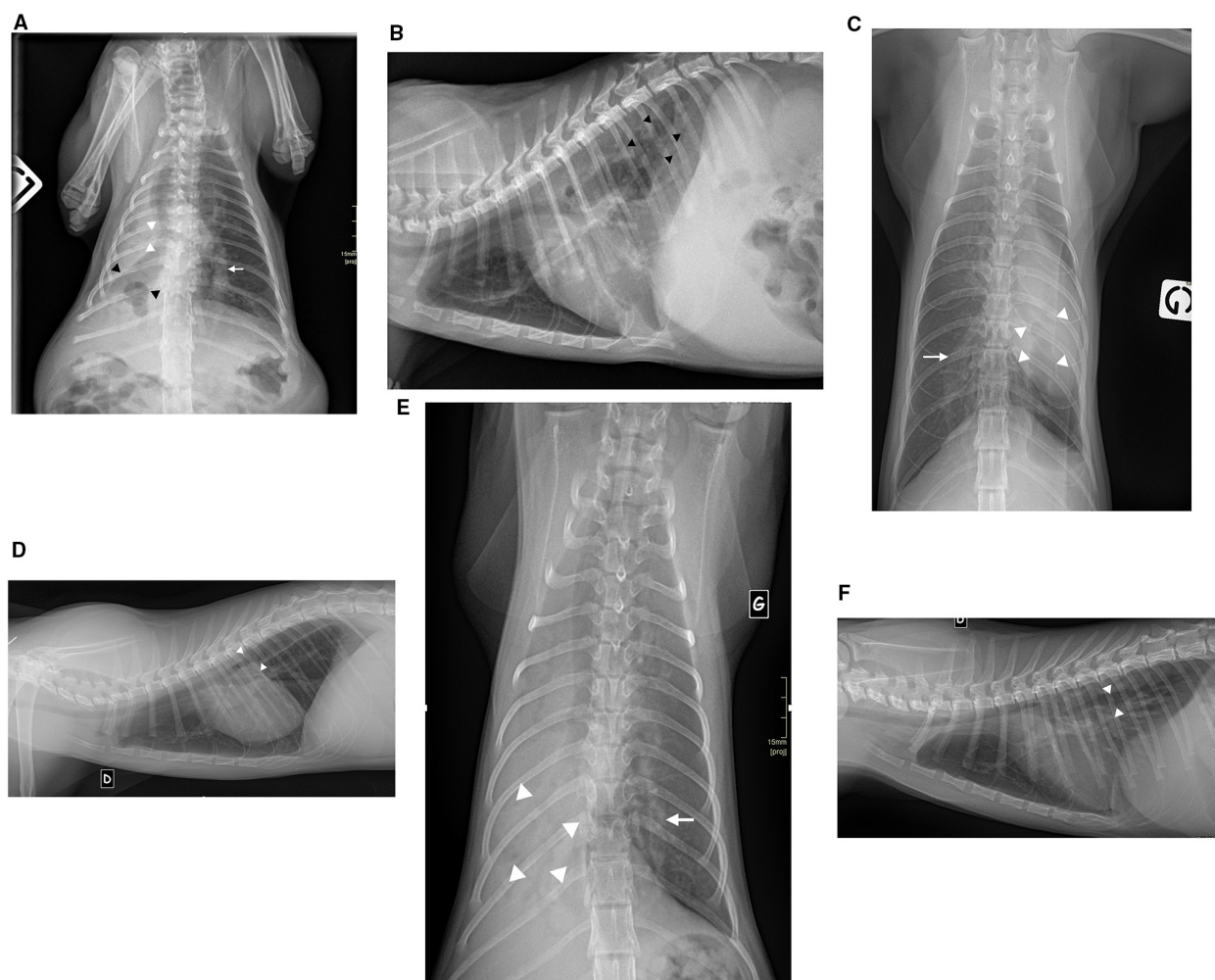


FIGURE 2

Thoracic radiographs of three kittens with severe unilateral bronchiectasis and concurrent detection of *Mycoplasma felis*. Case 1 (A, B) right-sided bronchiectasis with ipsilateral atelectasis and compensatory hyperinflation of the left lung. Case 2 (C, D) left-sided bronchiectasis with ipsilateral atelectasis and compensatory hyperinflation of the right lung. Case 3 (E, F) right-sided bronchiectasis with ipsilateral atelectasis and compensatory hyperinflation of the left lung. Black arrowheads indicate saccular bronchiectasis, white arrowheads indicate varicose bronchiectasis, and white arrows indicate pulmonary artery dilation.

Due to a poor prognosis, euthanasia of the kitten was performed. Post-mortem examination revealed extensive atelectasis, affecting predominantly the right lung lobes (nearly 100% of the parenchyma). Microscopically, large areas of parenchymal atelectasis were identified in all lobes, especially in the right lung lobes. Bronchial collapse was also evident in the right lung lobes, as well as bronchiectasis and bronchitis characterized by severe infiltration of lymphocytes and plasma cells. The bronchial lumen contained neutrophilic exudate, pyocytes, and desquamated epithelial cells. Additionally, small areas of neutrophilic and purulent pneumonia were noted. In the left lung lobes, an inflammatory exudate was also present, and the left caudal lung lobe was hyperinflated.

3.2 Case 2 and Case 3

Cases 2 and 3 were siblings, both Russian Blue kittens, presented at the age of 4 months with respiratory signs that had

been present since 2 weeks of age. Clinical signs initially involved the upper respiratory tract but progressed to the lower respiratory tract and were characterized by a chronic wet cough and dyspnea, with temporary improvement following antibiotic treatments. Two other siblings had also presented upper respiratory signs but had responded to treatment and recovered fully. The owner reported that one of their queens was herpesvirus-positive and that similar respiratory issues had occurred in two other litters from the same cattery.

Diagnostic tests, including FeLV/FIV serology, biochemistry, and hematology were unremarkable.

Given the nature of the respiratory signs, thoracic radiographs were performed. In both kittens, radiographs revealed severe unilateral varicose bronchiectasis involving the caudal lobar bronchus, affecting the left caudal lung lobe in Case 2 (Figures 2C, D) and the right caudal lung lobe in Case 3 (Figures 2E, F). These findings were associated with marked ipsilateral lung lobe consolidation and volume loss resulting in a mediastinal shift toward the affected hemithorax. Compensatory hyperinflation

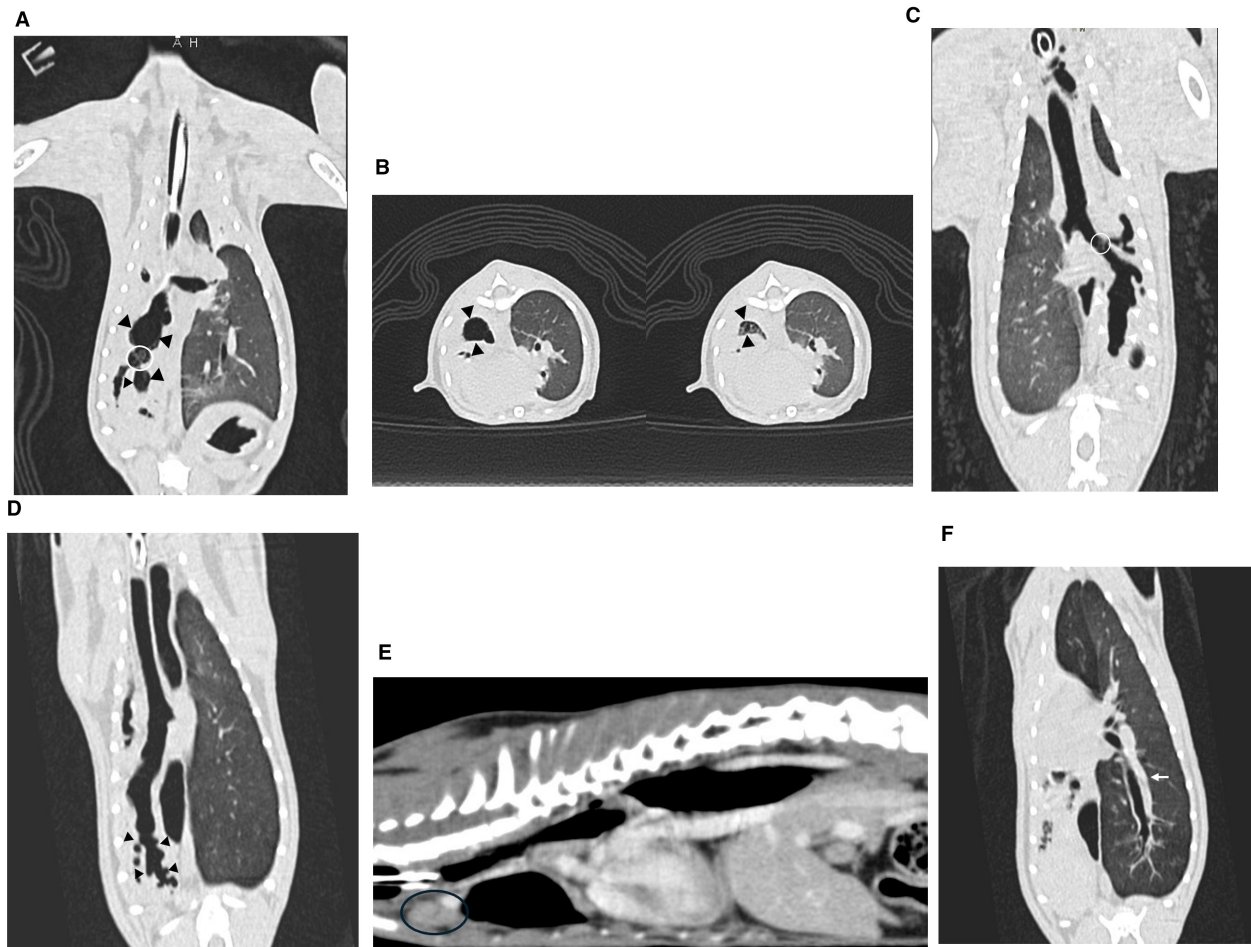


FIGURE 3

Thoracic CT images of three kittens with severe unilateral bronchiectasis and concurrent detection of *Mycoplasma felis*. Case 1 (A, B) right-sided bronchiectasis with ipsilateral atelectasis. Image B illustrates bronchomalacia, demonstrated by a marked variation in the diameter of the right caudal mainstem bronchus between inspiratory (left) and expiratory (right) transverse CT images. Case 2 (C) left-sided bronchiectasis with ipsilateral atelectasis. Case 3 (D–F) right-sided bronchiectasis with associated atelectasis. Mild diffuse ground-glass opacity is present in the contralateral lung lobes. Black arrowheads indicate saccular bronchiectasis, white arrowheads indicate varicose bronchiectasis, and white arrows indicate pulmonary artery dilation. Bronchial content is outlined by white circles, and black circles indicate sternal lymphadenopathy (E).

of the contralateral lung and pulmonary arterial dilation were observed in both cases. Tracheobronchial lymphadenopathy was also suspected in Case 2.

To summarize, the key radiographic findings for Cases 2 and 3 included severe bronchiectasis, ipsilateral atelectasis, mediastinal shift, compensatory contralateral hyperinflation, and pulmonary arterial dilation.

The main differential diagnoses included congenital airway abnormalities, primary ciliary dyskinesia and chronic or recurrent lower respiratory tract infection. Computed tomography was subsequently performed to further characterize the airway abnormalities and pulmonary lesions, assess the extent and severity of bronchiectasis, detect potential intraluminal bronchial obstruction and potential underlying obstructive lesions, and determine whether surgical management could be considered.

The CT scan of case 2 was canceled because the cat became unstable under anesthesia. Thoracic CT of Case 3 (Figures 3D–F) revealed severe atelectasis of the right lung lobes and compensatory hyperinflation of the left lung lobes with mild diffuse ground-glass

attenuation. Severe varicose bronchiectasis affected the right cranial, right middle, and right accessory lobar bronchi, while severe saccular bronchiectasis was present in the right caudal lobar bronchus. No significant variation in bronchial diameter was observed between inspiratory and expiratory acquisitions. Small amounts of foamy intraluminal material were present within the affected right lobar bronchi. Mild dilation of the left caudal pulmonary artery was observed compared with its accompanying satellite vein. Mild enlargement of the sternal lymph nodes (maximum thickness 5 mm) and of the cranial mediastinal and tracheobronchial lymph nodes (maximum thickness 4 mm) was noted. Given the concurrent pulmonary abnormalities, the lymphadenopathy was considered consistent with a reactive process secondary to chronic airway and pulmonary disease.

In both Cases 2 and 3, tracheal aspiration and lavage were performed. Cytology revealed severe neutrophilic inflammation. Bacterial culture was negative in both kittens. Quantitative PCR testing detected *Mycoplasma felis* (CT = 27.8 for case 2 and 25.6 for case 3) and *Feline calicivirus* (CT = 26.3 for case 2 and 21.8 for

case 3), while *Chlamydomphila felis*, *Feline herpesvirus-1*, *Bordetella bronchiseptica*, *Mycoplasma gateae*, and *Aelurostrongylus abstrusus* were not detected.

Both kittens were treated with doxycycline (5 mg/kg orally twice daily [BID]) for an initial period of 4 weeks, in combination with daily saline nebulization.

At follow-up consultation 2 months later, both kittens showed clinical improvement. Case 3 was almost asymptomatic, whereas Case 2 continued to exhibit a persistent cough. Follow-up thoracic radiographs (Supplementary Figures S1, S2) showed no radiographic improvement of the lung lesions. Indeed, the imaging findings remained consistent with ongoing disease or sequelae, prompting an extension of treatment for 4 weeks.

One month later, Case 2 returned with persistent respiratory signs. Thoracic radiographs remained unchanged, and a CT scan was performed. Thoracic CT (Figure 3C) revealed severe atelectasis of the left lung lobes and compensatory hyperinflation of the right lung lobes with mild diffuse ground-glass attenuation and multifocal areas of mosaic attenuation. Varicose bronchiectasis affected the left lobar bronchi with the left caudal lobar bronchus being the most severely impaired. Small amounts of foamy intraluminal material partially obstructed the left cranial lobar bronchus. No significant variation in bronchial diameter was observed between inspiratory and expiratory acquisitions. Tracheobronchial lymphadenopathy (maximum thickness 5 mm) and mild dilation of the right pulmonary arteries, particularly the right caudal pulmonary artery compared with its accompanying satellite vein, were also noted.

Case 2 underwent a left pneumonectomy via sternotomy. Histopathological examination revealed neutrophilic bronchopneumonia with bronchiectasis and areas of atelectasis. These findings were consistent with a bacterial infection, including a possible *Mycoplasma* etiology.

Case 2 recovered well and was discharged 48 hours postoperatively with a new antibiotic regimen (cephalexin 16 mg/kg BID) for 5 days.

For Cases 2 and 3, the final diagnosis was severe bronchopneumonia with chronic sequelae and secondary atelectasis. A viral contribution was suspected but could not be definitively confirmed. Indeed, *Feline calicivirus* was detected in both kittens, and a history of *Feline herpesvirus* infection was reported in the queen. Concurrent infection with *Mycoplasma felis* was also identified in both kittens.

At telephone follow-up conducted more than 8 years later, the owner reported that both cats were alive and in excellent clinical condition. Case 2 had received several additional postoperative courses of antibiotics but subsequently showed complete resolution of clinical signs, with no recurrence of respiratory or other abnormalities. Case 3 was also reported to be in excellent health, with no further history of respiratory disease.

4 Summary of imaging findings

The main imaging findings, summarized in Table 1, were consistent across all three cases. Bronchiectasis, predominantly of

TABLE 1 Main imaging findings.

Imaging findings	Radiography n/N (%)	CT n/N (%)
Bronchiectasis (all types)	3/3 (100%)	3/3 (100%)
Varicose bronchiectasis	3/3 (100%)	3/3 (100%)
Saccular bronchiectasis	1/3 (33%)	2/3 (67%)
Moderate to severe atelectasis	3/3 (100%)	3/3 (100%)
Unilateral distribution (Atelectasis + bronchiectasis)	3/3 (100%)	2/3 (67%)
Compensatory contra-lateral pulmonary hyperinflation	2/3 (67%)	3/3 (100%)
Ground-glass attenuation of the hyperinflated lobes	0/3 (0%)	3/3 (100%)
Bronchial content	0/3 (0%)	3/3 (100%)
Lymphadenopathy	1/3 (33%)	3/3 (100%)
Pulmonary artery dilation	3/3 (100%)	3/3 (100%)
Predominant caudal lobe involvement	3/3 (100%)	3/3 (100%)

the varicose type, and moderate to severe atelectasis were identified in all kittens on both imaging modalities (3/3). These lesions were primarily unilateral, with the caudal lung lobes being more severely affected. Prior to CT examination, the main differential diagnoses included congenital airway abnormalities (particularly bronchial malformations), primary ciliary dyskinesia, and chronic or recurrent lower respiratory tract infection. CT confirmed the radiographic findings and provided additional characterization of the airway and pulmonary lesions. Indeed, CT identified bronchial luminal material, documented bronchomalacia in Case 1, and assessed more accurately the distribution of pulmonary atelectasis and consolidation. The CT findings supported the presence of a chronic underlying airway disorder, rendered the presence of an obstructive mass lesion unlikely, and ruled out a persistent source of infection such as a pulmonary abscess. Compensatory contralateral pulmonary hyperinflation was observed in all CT examinations (3/3) and in all radiographic studies (3/3). Moreover, computed tomography enabled detection of diffuse ground-glass attenuation (3/3) and thoracic lymphadenopathy (3/3), which were not or are only rarely identified on radiographs. Mild pulmonary arterial dilation was observed in all cases on both imaging modalities (3/3); however, pulmonary hypertension was not confirmed.

5 Discussion

In cats, bronchiectasis predominantly affects the caudal lung lobes (2), a distribution pattern similar to the one reported in human, where the lower lobes are most frequently involved (11). In humans, the condition is most often idiopathic but may also develop secondarily to recurrent respiratory infections during

childhood (11). Although a potential role of gravity-dependent factors has been suggested in the medical literature (12), this hypothesis poorly explains the feline distribution, since aspiration and inflammatory lung diseases typically affect the cranioventral regions. To our knowledge, no specific explanation has been proposed for feline cases of bronchiectasis. The distribution of bronchiectasis observed in the three kittens included in this study was consistent with previous findings reported in the veterinary literature.

The etiology of bronchiectasis varies with age. In adult cats, it generally develops secondarily to chronic inflammatory airway disease, emphysema, or neoplasia, all of which impair mucociliary clearance and predispose to secondary infection (1–3). In kittens younger than 6 months, a congenital or early acquired origin is more likely. The onset of clinical signs as early as 2 to 8 weeks of age in our cases suggests a developmental component.

Therefore, congenital and host-related factors should be considered in kittens presenting with severe bronchiectasis at a young age. Primary ciliary dyskinesia and immune deficiency disorders were included in the differential diagnoses because of the early onset and severity of respiratory disease (7, 13). Long-term follow-up revealed a favorable outcome in Cases 2 and 3, which remained asymptomatic several years after diagnosis. This evolution argues against a severe underlying congenital or primary immunodeficiency disorder. Similarly, primary ciliary dyskinesia or systemic immune dysfunction appear less likely, given the predominantly unilateral distribution of lesions and their confinement to the lower respiratory tract. Nevertheless, in the absence of further thorough investigations, including ciliary ultrastructural examination, genetic testing, and immunological assessment, these conditions cannot be formally excluded.

The clinical and imaging features observed in the present cases, particularly unilateral pulmonary opacification, atelectasis, and lymphadenopathy, are similar to findings reported in children with *Mycoplasma pneumoniae* infection (14, 15). In pediatric patients, such findings are recognized as risk factors for refractory pneumonia (14). However, these imaging abnormalities are non-specific and may occur with a variety of infectious etiologies. Furthermore, one of the cited pediatric studies included concurrent infections (15), whereas the other did not clearly report whether alternative infectious pathogens had been excluded (14). As a consequence, although *Mycoplasma felis* was consistently detected in the our cases and may have contributed to airway injury and disease progression, its specific role could not be established. Moreover, the implication of other infectious agents, mixed infections, or secondary colonization could not be ruled out.

However, this study presents several limitations that must be acknowledged. Firstly, the small sample size limits the generalization of the findings and prevents statistical evaluation of a potential association between *Mycoplasma felis* infection and bronchiectasis. Secondly, the retrospective nature of the study resulted in a variability in diagnostic workups and treatment protocols between cases. Finally, follow-up imaging was only performed in two cases, restricting the assessment of disease

progression and long-term treatment response. Despite these limitations, this study provides additional information regarding the clinical and imaging presentation of severe bronchiectasis in young kittens.

In conclusion, this study describes the clinical and imaging characteristics of severe bronchiectasis in three kittens. Although *Mycoplasma felis* was consistently detected, its role in the development of bronchiectasis could not be determined. Further studies are needed to better define the respective roles of infectious agents, congenital abnormalities, and immune-related factors in the development of bronchiectasis in young cats.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical approval was not required for the studies involving animals in accordance with the local legislation and institutional requirements because the study only involved retrospectively collected clinical data. Written informed consent was obtained from the owners for the participation of their animals in this study. Written informed consent was obtained from the participants for the publication of this case report.

Author contributions

CF: Conceptualization, Data curation, Methodology, Investigation, Resources, Writing – original draft, Writing – review & editing, Visualization, Formal analysis. FB: Writing – review & editing, Data curation, Methodology, Conceptualization. EV: Writing – review & editing, Data curation, Methodology, Conceptualization. TJ: Writing – review & editing, Data curation. GB: Conceptualization, Validation, Data curation, Supervision, Writing – review & editing, Project administration, Resources, Methodology.

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Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fvets.2026.1874812/full#supplementary-material>

SUPPLEMENTARY FIGURES S1, S2. FOLLOW-UP THORACIC RADIOGRAPHS OF CASES 2 AND 3
Persistent severe unilateral bronchiectasis remained evident in both kittens, characterized by varicose bronchial dilatation (white arrowheads), ipsilateral atelectasis, and contralateral compensatory pulmonary hyperinflation. White arrows indicate dilation of the accompanying pulmonary artery.

References

- Kang D, Womble M, Cullen JM, Harrison TM, Premanandan C, Schreag ME. Severe bronchiectasis resulting from chronic bacterial bronchitis and bronchopneumonia in a jungle cat. *J Vet Diagn Invest.* (2024) 36:131–6. doi: 10.1177/10406387231216181
- Norris CR, Samii VF. Clinical, radiographic, and pathologic features of bronchiectasis in cats: 12 cases (1987–1999). *J Am Vet Med Assoc.* (2000) 216:530–4. doi: 10.2460/javma.2000.216.530
- Moorhead WJ, Mai W, Reetz JA, Hecht S, Noel PG. CT features of feline cystic bronchiectasis forming mass lesions. *J Feline Med Surg Open Rep.* (2024) 10:20551169231217866. doi: 10.1177/20551169231217866
- Reid L. Reduction in bronchial subdivision in bronchiectasis. *Thorax.* (1950) 5:233–47. doi: 10.1136/thx.5.3.233
- Reinero CR, Masseau I, Grobman M, Vientos-Plotts A, Williams K. Perspectives in veterinary medicine: description and classification of bronchiolar disorders in cats. *J Vet Intern Med.* (2019) 33:1201–21. doi: 10.1111/jvim.15473
- LaRue MJ, Garlick DS, Lamb CR, O'Callaghan MW. Bronchial dysgenesis and lobar emphysema in an adult cat. *J Am Vet Med Assoc.* (1990) 197:886–8. doi: 10.2460/javma.1990.197.07.886
- Roperto F, Brunetti A, Saviano L, Galati P. Morphologic alterations in the cilia of a cat. *Vet Pathol.* (1996) 33:460–2. doi: 10.1177/030098589603300420
- Robin T, Bigay M, Touzet C, Le Boedec K. Clinical and prognostic relevance of *Mycoplasma felis* PCR detection in feline lower respiratory tract disease. *J Feline Med Surg.* (2024) 26:1098612X241297870. doi: 10.1177/1098612X241297870
- Le Boedec K. A systematic review and meta-analysis of the association between *Mycoplasma* spp and upper and lower respiratory tract disease in cats. *J Am Vet Med Assoc.* (2017) 250:397–407. doi: 10.2460/javma.250.4.397
- Doumat G, Aksamit TR, Kanj AN. Bronchiectasis: a clinical review of inflammation. *Respir Med.* (2025) 244:108179. doi: 10.1016/j.rmed.2025.108179
- Cantin L, Bankier AA, Eisenberg RL. Bronchiectasis. *Am J Roentgenol.* (2009) 193:W158–71. doi: 10.2214/AJR.09.3053
- King PT. The pathophysiology of bronchiectasis. *Int J Chron Obstruct Pulmon Dis.* (2009) 4:411. doi: 10.2147/copd.s6133
- DeBey MC. Primary immunodeficiencies of dogs and cats. *Vet Clin North Am Small Anim Pract.* (2010) 40:425–38. doi: 10.1016/j.cvsm.2010.01.001
- Zhai YY, Wu SZ, Yang Y, Yang LY, Xu JX, Huang ZH, et al. An analysis of 20 clinical cases of refractory mycoplasma pneumonia in children. *Ann Palliat Med.* (2020) 9:2592–9. doi: 10.21037/apm-19-497
- Ocak M, Öz FN, Çınar HG, Tanir G. Clinical and radiologic manifestations of *Mycoplasma pneumoniae* infection in children. *Turk J Pediatr.* (2022) 64:1031–40. doi: 10.24953/turkjped.2022.545