World Journal of Surgical Oncology

CASE REPORT

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SMARCA4-deficient non-small cell lung cancer with metastasis to the sigmoid colon: a case report

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Abstract

Background SWI/SNF-related, matrix-associated, actin-dependent regulator of chromatin, subfamily a, member 4-deficient non-small cell lung cancer (SMARCA4-dNSCLC) is a rare subtype of NSCLC whose definitive radiographic characteristics have not yet been fully delineated. Clinically, these tumors often metastasize to distant organs and lymph nodes at an early stage, which is strongly associated with poor clinical prognosis. The common metastatic sites include bone, brain, adrenal glands, liver, and spleen, whereas intestinal metastasis is extremely rare. In this case, we describe a rare instance of SMARCA4-deficient NSCLC with metastasis to the sigmoid colon.

Case description A 59-year-old male presented with hoarseness and shortness of breath. Computed tomography (CT) imaging revealed an irregular mass in the posterior apical segment of the upper lobe of the left lung, with enlarged lymph nodes in the mediastinum and left lung hilum. A biopsy of the lung mass confirmed the diagnosis of NSCLC with *SMARCA4* gene deletion. CT also revealed uneven thickening of the sigmoid colon wall, which was proved to be metastases from the lung cancer through surgical pathology. The patient initially underwent chemotherapy combined with immunotherapy and intensity-modulated radiotherapy for the lungs. However, a follow-up CT revealed progression in the sigmoid colon tumor. Consequently, the patient underwent laparoscopic radical sigmoid colectomy with regional lymph node dissection. Two months postoperatively, metastasis to the left adrenal gland was detected. The treatment regimen was adjusted to a combination therapy consisting of gemcitabine, nedaplatin, bevacizumab, and camrelizumab accordingly. The patient demonstrated a favorable response to this treatment, with no evidence of recurrence or further metastasis to date.

Conclusions This case represents the first reported instance of SMARCA4-dNSCLC with metastasis to the sigmoid colon. The atypical clinical and radiological features of this condition pose significant diagnostic challenges, particularly in differentiating metastatic lesions from primary colonic tumors. This case underscores the significance of recognizing rare metastatic patterns in SMARCA4-dNSCLC, enriching the literature on its diverse manifestations and providing a critical reference for clinicians in diagnosing and managing SMARCA4-dNSCLC with sigmoid colon metastasis.

Keywords SMARCA4-deficient, Non-small cell lung cancer, Computed tomography, Immunohistochemistry, Rare metastatic sites, Case report

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Introduction

Lung cancer is the leading cause of cancer-related deaths globally, and approximately 50% of patients have distant metastases at the time of initial diagnosis [1, 2]. The most common sites of distal metastasis include the liver, adrenal glands, bone, and brain [3, 4]. Metastases to the gastrointestinal tract from lung cancer are uncommon, with autopsy studies showing an incidence of gastrointestinal metastasis in 0.2%–11.9% of cases [5–7]. Colonic metastasis from primary lung cancer is rare, with an incidence of approximately 0.5% [8].

SWI/SNF-related, matrix-associated, actin-dependent regulator of chromatin, subfamily a, member 4-deficient non-small cell lung cancer (SMARCA4-dNSCLC) is a rare and aggressive malignancy of the lung [9]. Only in recent years has SMARCA4-dNSCLC emerged as a distinct subset of NSCLC [10, 11]. Approximately 5%–10% of NSCLC cases exhibit aberrant expression of SMARCA4, with 4% showing loss of BRG1 [10, 12–14]. SMARCA4-dNSCLC is predominantly observed in middle-aged and elderly males, with a median age of 63 [12]. There is limited information available on the imaging characteristics of this subtype. This tumor typically manifests as a solitary peripheral lung mass, with a median size of approximately 4.0 cm, and frequently exhibits vascular and pleural invasion. During the disease course, 87% of patients develop lymph node metastases, and about 65% experience distant metastases [15]. Common metastatic sites include the bone, brain, adrenal glands, liver, and spleen [12, 16]. To the best of our knowledge, no cases of SMARCA4-dNSCLC with gastrointestinal metastasis have been reported previously. Distinguishing metastatic from primary intestinal tumors is challenging due to overlapping features. Patients with SMARCA4-dNSCLC generally respond poorly to traditional chemotherapy methods, further complicating treatment [17], though immune checkpoint inhibitors (ICIs) have demonstrated some efficacy [13]. Herein, we review the clinical features, diagnosis, and treatment of SMARCA4-dNSCLC patients and report a case of SMARCA4-dNSCLC with sigmoid colon metastases.

Case presentation

A 59-year-old male was admitted to our hospital with hoarseness and shortness of breath that had persisted for 2 months. He had a 40-year history of smoking, averaging 20 to 60 cigarettes per day. The patient's family history was significant for lung cancer, with his father having succumbed to the disease. Medically, the patient had an 8-year history of hypertension, which has been well-controlled with regular amlodipine use. He had no history of prior surgeries. The physical examination revealed no abnormal findings. Routine blood tests showed a slight decrease in hemoglobin (12.5 g/dL; normal range: 13–17.5 g/dL). The fecal occult blood test was positive. Tumor markers including carcinoembryonic antigen of 212.53 ng/mL (normal range: ≤ 5 ng/mL), carbohydrate antigen 199 of 1111.54 U/mL (normal range: ≤ 43 U/mL), and carbohydrate antigen 125 of 681.2 U/mL (normal range: ≤ 24 U/mL) were elevated. The patient's laboratory test results are shown in Table 1. Contrast-enhanced computed tomography (CT) of the chest revealed an irregular mass, measuring 3.8 cm × 3.1 cm in the posterior apical segment of the left upper lobe. On plain scan, the mass showed a soft-tissue density with an average CT value of approximately 37 HU. The lesion showed signs of burr and lobulation, with adjacent pleural retraction. Post-contrast imaging revealed mild heterogeneous enhancement within the lesion (Fig. 1a, b). Enlarged lymph nodes were observed in the mediastinum and left lung hilum, with the largest measuring approximately 3.8 × 3.5 cm (Fig. 1b). Abdominal contrast-enhanced CT revealed uneven thickening of the sigmoid colon wall (Fig. 1c). In front of the left psoas major muscle, an enlarged lymph node, measuring 2.5 cm in the short diameter, was detected (Fig. 1d).

Table 1 Laboratory test results of the patient

Test Items	Results	Normal Range	Unit
Hematocrit	38.8	40.0-50.0	%
Hemoglobin	125	130-175	g/L
Monocyte count	0.634	0.10-0.60	10^9/L
Fibrinogen	3.86	1.80-3.50	g/L
Albumin	36.4	40.0-55.0	g/L
Direct Bilirubin	10.9	0.0-8.0	μmol/L
Fecal Occult Blood Test	Positive	Negative	N/A
Carcinoembryonic Antigen	212.53	≤5	ng/mL
Carbohydrate Antigen 199	1111.54	≤43	U/mL
Carbohydrate Antigen 125	681.20	≤24	U/mL
BRG1	Negative	N/A	N/A
CDX2	Negative	N/A	N/A
CK	Positive	N/A	N/A
CK7	Positive	N/A	N/A
CK20	Negative	N/A	
KI-67	Positive (Lung: 40%, Colon: 20%)	N/A	%
NapsinA	Negative	N/A	N/A
P40	Negative	N/A	N/A
P63	Negative	N/A	N/A
Syn	Negative	N/A	N/A
TTF1	Negative	N/A	N/A

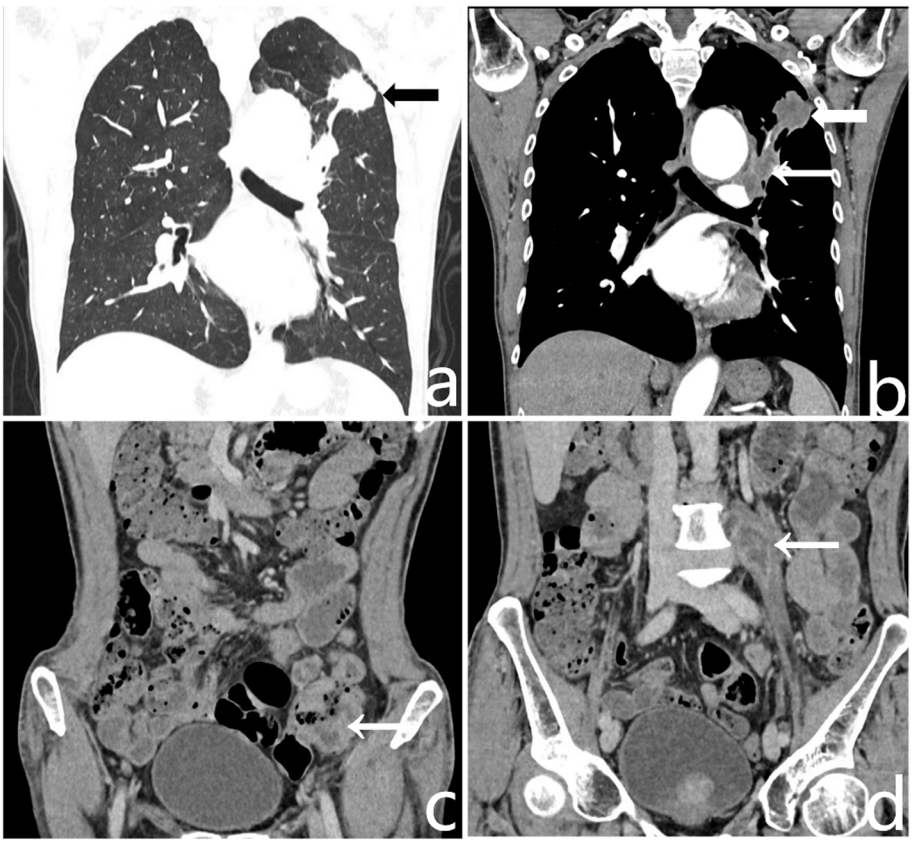

Fig. 1 CT images of a 59-year-old male with SMARCA4-dNSCLC at the time of initial diagnosis. **a** The coronal lung window image shows a mass measuring 3.8 cm × 3.1 cm in the posterior apical segment of the upper lobe of the left lung, accompanied by lobulation and spiculation signs (black arrow). **b** The coronal mediastinal window image shows that the mass had mild heterogeneous enhancement (white thick arrow) and was accompanied by enlarged lymph nodes in the left hilar region (white thin arrow); **c** The coronal CT of the abdomen shows uneven thickening of the sigmoid colon wall (white arrow), **d** and an enlarged lymph node in front of the leftpsoas major muscle is observed (white arrow)

Subsequently, a CT-guided biopsy of the lung mass confirmed the diagnosis of NSCLC with *SMARCA4* gene deletion. The tumor was positive for CK (+) and CK7 (+) via immunostaining, and the Ki-67 labeling index was > 40% (Fig. 2). Colonoscopy revealed an annular neoplasm located 30 cm from the anal verge, causing luminal obstruction (Fig. 3). At a multidisciplinary team (MDT) discussion, whether the colonic carcinoma was metastatic or primary was not decided. The patient initially received three cycles of combination therapy with albumin-bound paclitaxel (400 mg), carboplatin (400 mg), and camrelizumab (200 mg) (Q3W), followed by intensity-modulated radiation therapy (IMRT) targeting the lung area (60 Gy/30 fractions). During radiotherapy, hematochezia developed. Abdominal CT revealed significant sigmoid colon wall thickening (Fig. 4a, b) and marked enlargement of the lymph node anterior to the left psoas major muscle (short diameter: 3.3 cm), with increased necrosis compared to before (Fig. 4c). In contrast, chest CT showed a reduction in the primary lung mass (3.1 × 2.1 cm), and the CT value dropped to around 19HU (Fig. 4d).

At a second MDT discussion, the lung mass demonstrated a favorable response to treatment, whereas the sigmoid colon tumor exhibited progressive enlargement, leading to the suspicion of a primary colonic lesion. The patient subsequently underwent laparoscopic radical sigmoid colectomy and regional lymph node dissection. Intraoperative exploration of the liver, greater omentum, intestinal tract, mesentery, and peritoneum revealed no evidence of implantation metastasis. Multiple adhesions were observed between the greater omentum and the lateral peritoneum. The sigmoid colon tumor penetrated the serosa, invaded the lateral peritoneum, and adhered infiltratively to the greater omentum. Enlarged lymph nodes were identified at the root of the inferior mesenteric vessels. Histologic examination revealed full infiltration and extensive ulceration of the sigmoid colon wall, consistent with poorly differentiated carcinoma. No neoplastic proliferation was observed in the resection margin

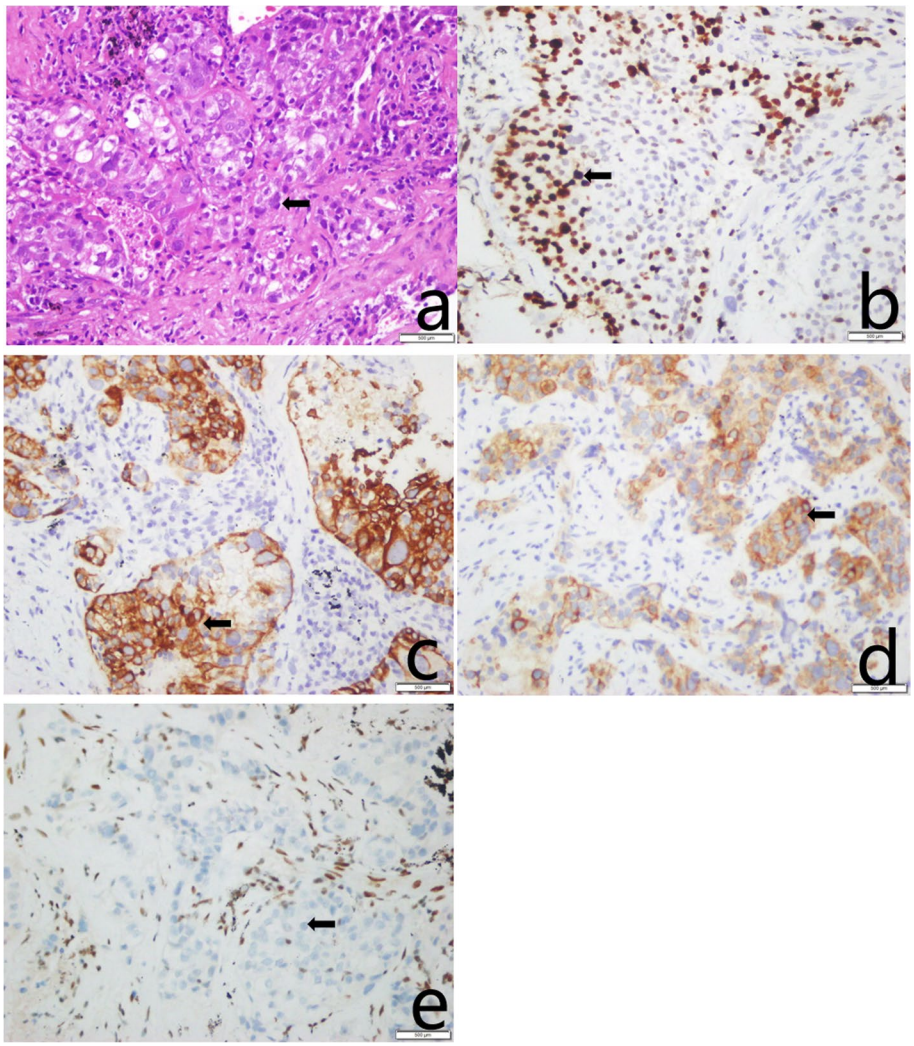

Fig. 2 The pathological findings of a 59-year-old male with SMARCA4-dNSCLC. **a** Percutaneous left lung puncture biopsy guided by computed tomography, with HE staining showing diffuse sheets of small blue round tumor cells (black arrow) (scale bar 500 μm). **b** Immunohistochemistry showing 40% positivity for Ki67 (black arrow) (scale bar 500 μm). **c** Immunohistochemistry showing positivity for CK (black arrow) (scale bar 500 μm). **d** Immunohistochemistry showing positivity for CK7 (black arrow) (scale bar 500 μm). **e** Immunochemical staining of SMARCA4 reveals the tumor cells are negative for SMARCA4 expression (black arrow) (scale bar 500 μm). HE, hematoxylin and eosin; CK, cytokeratin

or lymph nodes. Immunohistochemistry (IHC) showed that the sigmoid mass was positive for CK and CK7 but negative for BRG-1, TTF-1, CK20, and CDX2, confirming metastatic sigmoid colon cancer originating from SMARCA4-dNSCLC (Fig. 5).

Postoperatively, the patient continued radiotherapy. Two months later, left adrenal gland metastasis developed, leading to a shift to combination therapy with gemcitabine (1500 mg, d1, d8, Q3W), nedaplatin (100 mg, Q3W), bevacizumab (800 mg, Q3W), and camrelizumab (200 mg, Q3W). To date, no recurrence or further metastasis has been observed. Figure 6 summarizes the treatment timeline.

Discussion

The *SMARCA4*gene on chromosome 19p13 encodes the transcription activator BRG1, which is pivotal in regulating transcriptional processes in various cancers [18]. As an ATP-dependent catalytic subunit of the SWI/SNF complex, SMARCA4 provides the energy required for chromatin remodeling through its ATPase enzymatic function [18]. The 2021 WHO Classification of Thoracic Tumors (5th edition) recognizes SMARCA4-dNSCLC as a distinct entity within thoracic tumors [19]. Histologically, SMARCA4-dNSCLC can present as differentiated adenocarcinoma, squamous carcinoma, or undifferentiated carcinoma [16]. Most patients are diagnosed at stage

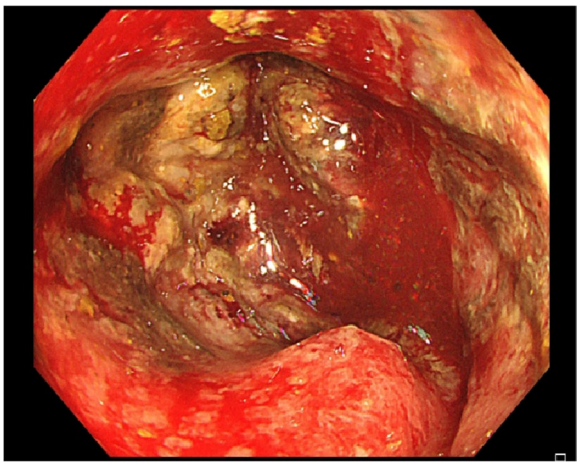

Fig. 3 Colonoscopy discloses an annular neoplasm with luminal obstruction in the sigmoid colon

IV, which is characterized by aggressive tumor behavior, high Ki-67 indices, and a significant incidence of adrenal and lymph node metastases [10, 12, 13, 20].

A recent study on SMARCA4-dNSCLC reported that the majority of cases involved chronic smokers aged 48–83 years (median age: 67), with a male-to-female ratio of 34:1 [12]. Our case is consistent with these findings, involving a middle-aged male with a 40-year history of heavy smoking.

Patients with SMARCA4-dNSCLC often exhibit non-specific symptoms similar to other types of lung cancer, including cough, dyspnea, chest pain, hoarseness, and hemoptysis [21, 22]. However, a study by Kim et al. found that only one patient (11.1%) exhibited symptoms such as hoarseness, cough, and sputum at diagnosis, while the remaining eight (88.9%) were asymptomatic [23]. Gastrointestinal metastases from primary lung cancer [24], are symptomatic in only 0.2% to 1.7% of patients. They are rare and sometimes misdiagnosed as primary digestive tract tumors [7, 8]. Common initial symptoms of

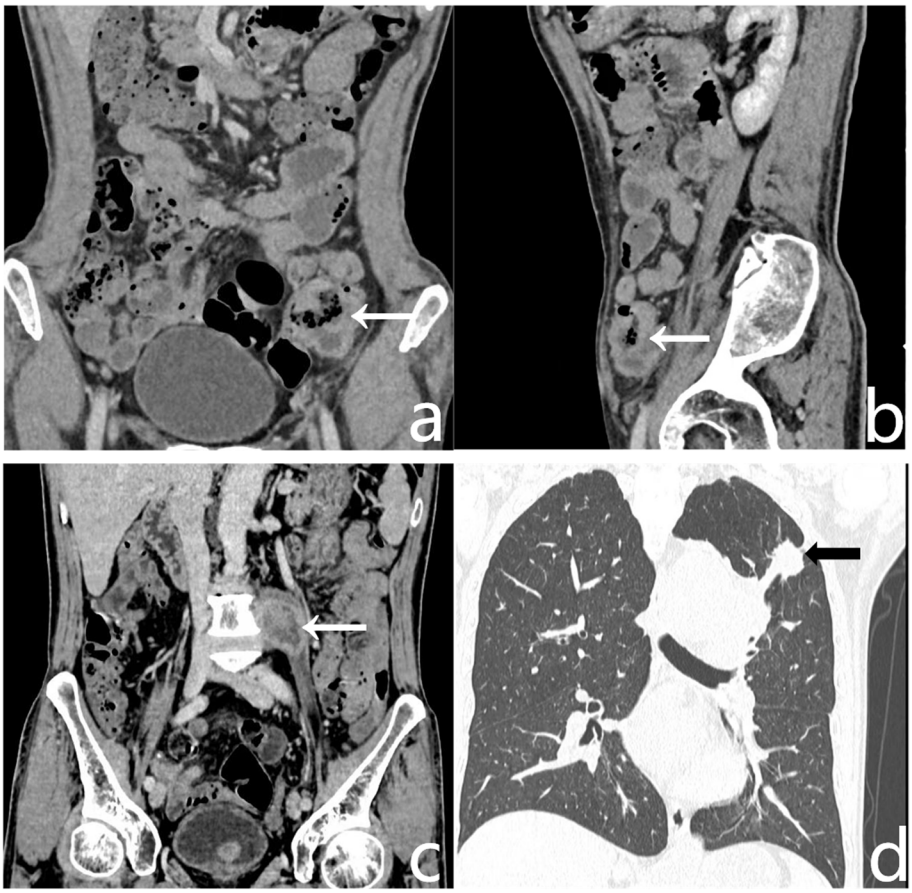

Fig. 4 CT images obtained more than one month following the third cycle of chemotherapy in combination with immunotherapy. **a** and **b** Coronal (a) and sagittal (b) CT reveal obvious thickening of the sigmoid colon wall (white arrow). **c** The coronal CT of the abdomen shows an enlarged lymph node in front of the left psoas major muscle (white arrow); **d** The coronal lung window shows a reduction in the size of the primary lung mass (black arrow), measuring approximately 3.1 × 2.1 cm

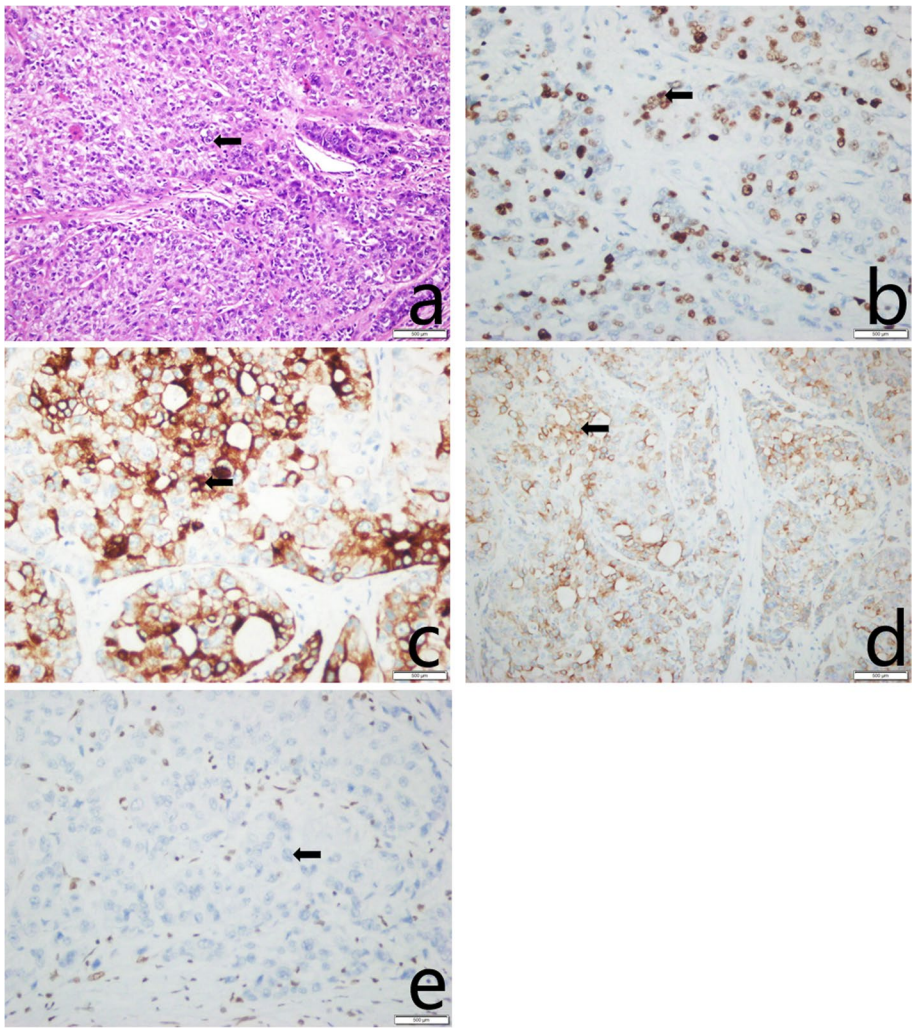

Fig. 5 Histological analyses of sigmoid colon tumors after resection. **a** HE staining shows diffuse sheets of small round tumor cells with eosinophilic cytoplasm and clear cell borders (black arrow) (scale bar 500 μm). **b** Immunohistochemistry showing 20% positivity for Ki67 (black arrow) (scale bar 500 μm). **c** Tumor cells have positive staining for CK (black arrow) (scale bar 500 μm). **d** Tumor cells have positive staining for CK7 (black arrow) (scale bar 500 μm). **e** Tumor cells have negative staining for SMARCA4 (black arrow) (scale bar 500 μm)

colonic metastases include abdominal pain due to intestinal obstruction, melena, or hematochezia [5, 25–28], although some gastrointestinal metastases remain asymptomatic in the early stages. In our case, the patient initially exhibited no intestinal symptoms, although a fecal occult blood test was positive and CT imaging revealed colonic carcinoma (confirmed via colonoscopy). The patient later developed melena as the carcinoma progressed. The low incidence and lack of characteristic symptoms make the initial diagnosis of colonic metastasis from lung cancer particularly challenging.

Histological examination remains the gold standard for diagnosing SMARCA4-dNSCLC. Immunohistochemistry (IHC) and molecular analyses are crucial in distinguishing SMARCA4-dNSCLC from other similar tumors. These tumors typically test negative for BRG-1 and TTF-1 but positive for CK7 [10, 12]. In our patient, the lung lesion was CK7-positive and BRG-1- and TTF-1-negative, confirming SMARCA4-dNSCLC. IHC aids in determining the tumor's primary origin. The $CK20^{-}$/$CK7^{+}$ phenotype is predominant in non-mucinous ovarian, breast, thyroid, kidney, endometrial, pancreatic, and lung adenocarcinomas, as well as in mesotheliomas. It is also observed in over 50% of non-colorectal gastrointestinal tract (GIT) adenocarcinomas. CK20 is primarily expressed in tumors of gastrointestinal origin, urothelial carcinomas, and Merkel cell carcinomas, whereas CK7 is expressed in a broader range of tumors but is typically negative in colorectal and prostate adenocarcinomas [29]. CK18 and CK19 are widely expressed in carcinomas

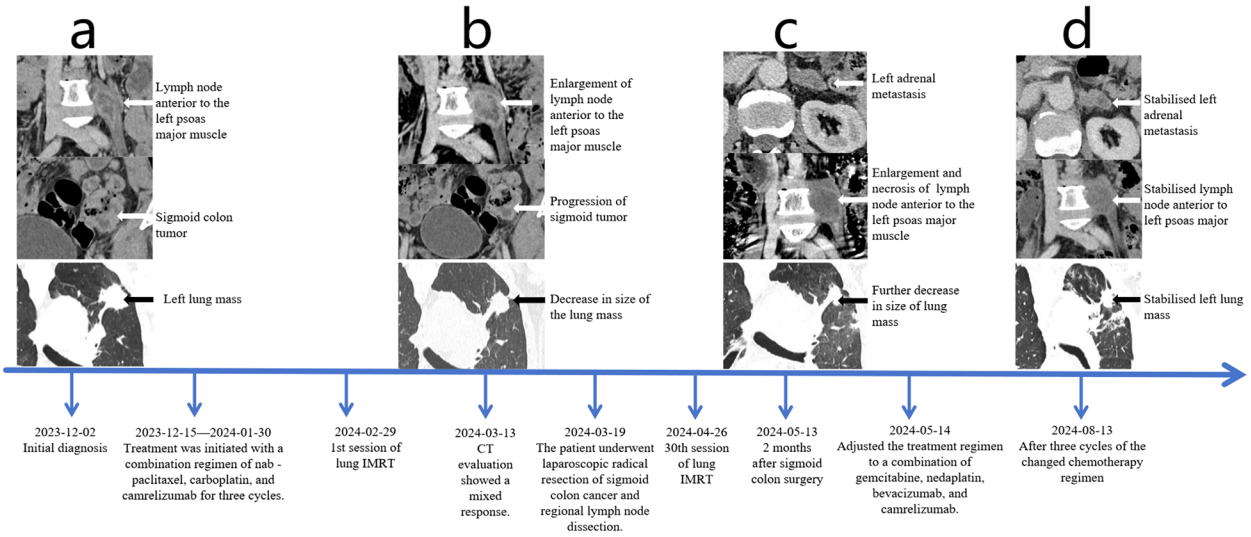

Fig. 6 Timepoint: **a** The Chest & Abdomen CT at the time of initial diagnosis. **b** CT evaluation indicated that while the pulmonary mass shrank, the sigmoid colon tumor and the lymph node anterior to the left psoas major muscle enlarged. **c** CT evaluation showed the further shrinkage of the chest mass, yet left adrenal gland metastasis occurred, indicating disease progression. **d** CT evaluation demonstrated that the patient's condition was relatively stable

of the breast, prostate, lung, colon, and ovary [30]. Notably, CK19 shows high expression in prostatic adenocarcinoma (PAC), with levels increasing significantly as the Gleason grade group advances [31]. Additionally, CDX2 serves as an important marker for tumors of gastrointestinal origin [32]. In this case, the sigmoid colon tumor was positive for CK7, and negative for TTF-1, CDX2, and CK20, confirming metastatic colon cancer originating from SMARCA4-dNSCLC.

The imaging features of SMARCA4-dNSCLC have been described in limited studies. These tumors typically appear as primary solid lung masses on CT, often located in the upper lobe and periphery of the lung [12, 15]. Unlike general ground-glass opacities, the mass diameter remains consistent across lung and mediastinal windows. The tumors rarely exhibit benign calcification but may show vascular convergence, cavitation, speculation, and pleural invasion. Tumor sizes range from 14.16 mm to 92.25 mm and are more likely to metastasize within the lung than other NSCLC types [15]. Our case presented with an irregularly shaped mass in the left lung's upper lobe, consistent with prior reports, showing heterogeneous contrast enhancement, spiculation, lobulation, pleural retraction, and enlarged mediastinal and hilar lymph nodes.

Colonic metastases from primary lung cancer are rare, and the CT features of gastrointestinal metastases remain underexplored. According to Kim et al., these metastases typically appear as a short segmental bowel-wall thickening or intraluminal polypoid masses with isoattenuating enhancement patterns [7]. These lesions may be accompanied by mild regional lymphadenopathy. Primary adenocarcinoma often results in intestinal lumen stenosis, whereas gastrointestinal metastases from lung cancer rarely lead to intestinal obstruction unless intussusception occurs [7]. In our patient, abdominal CT revealed uneven thickening of the sigmoid colon wall without obstruction but with lymphadenopathy anterior to the left psoas major muscle, consistent with previously reported features. Due to the lack of specificity from imaging and rarity of the disease, distinguishing intestinal metastases from primary intestinal tumors remains challenging. In our case, the definite diagnosis of metastatic colon carcinoma was only made after surgery. Lymph node and distant metastases are common in patients with SMARCA4-dNSCLC [15]. In previous case reports, all patients presented with primary pulmonary nodules or masses alongside multiple metastatic lesions involving the bones, adrenal glands, liver, brain, and lymph nodes [19, 33, 34], but none involved the gastrointestinal tract. Our case was the first 1 showing metastasis to the colon from SMARCA4-dNSCLC. At diagnosis, our patient exhibited mediastinal and retroperitoneal lymph node metastases, as well as sigmoid colon metastases, highlighting the high invasiveness of SMARCA4-dNSCLC. In Table 2, we summarize previously reported cases of SMARCA4—dNSCLC.

In addition, whole positron emission tomography—CT (PET-CT) is valuable for assessing disease burden and treatment response in SMARCA4-dNSCLC. It is widely

Table 2 The previously reported cases of SMARCA4-dNSCLC

Author/Year	Age/Sex	Symptoms	Primary site	Metastatic site	TNM	Treatment of primary tumors	Outcome (months)
Dai W., et al. (2024) [35]	79/F[a]	right cervical and shoulder pain	the lateral segment of the right middle lung lobe	Bone	IVB (T3N2M1)	Targeted therapy	Alive(6 months), then lost to FU
Ye R., et al. (2024) [19]	50/M[b]	fever, cough, and fatigue	the right lower lobe	Bone, lymph nodes	N/A	Targeted therapy + Chemotherapy + Immunotherapy	Died (6 month)
Wumener X., et al. (2023) [34]	45/M	unknown	the upper lobe of the left lung	Bone, brain, Lymph nodes	IVB (T2N3M1)	Chemotherapy + Immunotherapy	Alive(5 months), then lost to FU
Koizumi A., et al. (2023) [33]	63/M	hoarseness and swelling of the right neck	the right lower lobe	Bone, lymph nodes, liver, adrenal gland, brain	IVB (T4N3M1)	Chemotherapy + Targeted therapy	Alive(48 months), then lost to FU
Koizumi A., et al. (2023) [33]	54/M	unknown	the left upper lung	Lymph nodes, adrenal gland,	IVB (T4N3M1)	Chemotherapy + Immunotherapy	Alive(6 months), then lost to FU
Sun L., et al. (2023) [9]	60/F	unknown	the middle lobe of the right lung	Pleura, lymph nodes	N/A	Targeted therapy	Alive(9 months), then lost to FU

FU follow-up

[a] *F* Female

[b] *M* Male

used in diagnosing gastrointestinal tract metastatic tumors, demonstrating high sensitivity and specificity [26]. The study by Wumener X et al. showed that the rate constant (Ki) of metastatic lymph nodes in lung cancer was significantly higher than that of non-metastatic lymph nodes [34]. PET scanning detects extrathoracic metastases in approximately 25% of patients with clinical stage III disease and may reveal a higher incidence of colonic metastases than previously recognized [36]. In a stage IV SMARCA4—dNSCLC patient, PET-CT after 48 cycles of pembrolizumab treatment demonstrated complete resolution of uptake in all lesions [33]. In another case, post-treatment PET-CT revealed a marked reduction in FDG uptake in the primary lung lesion, with the maximum standardized uptake value (SUVmax) decreasing from 22.4 to 2.2 [34].

The differential diagnosis of SMARCA4-dNSCLC includes SMARCA4-deficient undifferentiated tumor (SMARCA4-UT)and small cell lung cancer (SCLC). Similar to SMARCA4-dNSCLC, SMARCA4-UT also belongs to the category of SMARCA4-deficient tumors. However, SMARCA4-UT is distinguished by more prominent tumor necrosis, with infiltration and compression of surrounding tissues and necrotizing lymphadenopathy, which helps differentiate it from SMARCA4-dNSCLC [37]. SCLC, another highly invasive malignancy of the chest, typically presents as a centrally located lung mass with mediastinal lymph node enlargement. Characteristically, SCLC involves central airway infiltration of the submucosal layer, leading to progressive narrowing of the bronchial lumen through outward or endobronchial spread [38]. These features further differentiate SCLC from the current case.

Compared with other types of lung cancer, SMARCA4-dNSCLC is highly invasive and has a poor response to conventional chemotherapy [18]. A study reported that the median overall survival (mOS) for patients with SMARCA4-dNSCLC is 12.2 months, with a 1-year survival rate of 51% and a 2-year survival rate of 20% [12]. In patients with stage IV disease, the median survival was significantly shortened to 4.4 months compared with those with stage II/III disease [11]. Studies have demonstrated the efficacy of ICIs in treating SMARCA4-dNSCLC [13]. Tomoyuki N. et al. reported a case in which a patient with SMARCA4-dNSCLC exhibited a sustained response to fourth-line nivolumab therapy for 14 months [39]. Notably, patients with advanced SMARCA4-dNSCLC show improved mOS when treated with a combination of immune checkpoint inhibitors and chemotherapy [12].

In addition, targeted therapies show promise in treating SMARCA4-dNSCLC. Preclinical studies and ongoing clinical trials suggest potential efficacy of inhibitors targeting oxidative phosphorylation (OXPHOS), aurora kinase A (AURKA), ataxia telangiectasia and Rad3-related (ATR), EZH2, and cyclin-dependent kinase 4/6 (CDK4/6) [18]. Palbociclib, a CDK4/6 inhibitor, effectively suppresses tumor growth in SMARCA4-mutant

NSCLC xenograft models. IHC analysis revealed significant reductions in RB phosphorylation, Ki67 expression, and the mitotic index following palbociclib treatment [40]. Recent studies have identified polycomb repressive complex 2 (PRC2) as a potential therapeutic target for the topoisomerase II (TopoII) inhibitor etoposide, which has shown survival benefits in NSCLC patients. The OXPHOS inhibitor IACS-010759, currently in clinical development, has shown potent antitumor efficacy and a favorable safety profile in SMARCA4-deficient NSCLC cell lines [18]. However, further clinical trials are needed to validate these targeted therapies and optimize their clinical benefits for advanced SMARCA4-dNSCLC.

However, the prognosis for primary lung cancer with intestinal metastasis is poor. Survival times following the discovery of colonic metastases from primary lung cancer typically range from 5 weeks to 1 year, with most patients succumbing within 6 months [24]. Patients receiving palliative surgical resection of the metastatic lesion showed a longer survival time [25, 41]. One report described a lung cancer patient who survived for more than 5 years after surgical resection of metastatic intestinal lesions [42]. Although patients with gastrointestinal metastasis from lung cancer were in the advanced stage of the disease, surgical intervention for colonic metastasis may offer symptomatic relief and clinical benefit. In our case, the patient underwent surgical resection of the sigmoid colon metastasis and continued treatment with nedaplatin combined with bevacizumab and camrelizumab after surgery. Although metastasis to the left adrenal gland was discovered 2 months post-surgery, the patient's general condition remained stable, and the primary pulmonary mass responded well to treatment.

Conclusion

This report describes a rare case of sigmoid colon metastasis from SMARCA4-dNSCLC, a highly aggressive form of lung cancer. The CT features of SMARCA4-dNSCLC are characterized by primary solid lung masses, often located in the peripheral lung regions, with heterogeneous density and signs of spiculation and lobulation. In patients with SMARCA4-dNSCLC, the presence of intestinal symptoms and uneven intestinal wall thickening should raise suspicion for synchronous intestinal metastasis. However, it is difficult to distinguish gastrointestinal metastatic cancer from primary gastrointestinal tumors from imaging. Given the early metastatic potential of SMARCA4-dNSCLC, synchronous colonic carcinoma should be classified as stage IV disease, with surgical pathology as the definitive diagnostic criterion. Surgical resection of such metastases may provide symptomatic relief and improve survival.

Acknowledgements
N/A.

Authors' contributions
Literature search:R-X, G-F; Data collection: R-X, G-F; Analysis of data:R-X, G-F,X-LL; Manuscript preparation:R-X; Review of manuscript:R-X, T-L. All authors have read and approved the final version of this manuscript.

Funding
N/A.

Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
The ethical review aboard of Sichuan Provincial People's Hospital approved the study.

Consent for publication
Written consent for the publication of the clinical details of participants was obtained from the patient.

Competing interests
The authors declare no competing interests.

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Received: 2 January 2025 Accepted: 17 March 2025
Published online: 29 March 2025

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