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Original Research

Gastrointestinal Kaposi Sarcoma: Histopathological Features and Diagnostic Challenges – Insights from a Single Center

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Abstract

Objectives: Gastrointestinal Kaposi sarcoma (GI-KS) is a rare vascular neoplasm associated with human herpesvirus 8 (HHV 8), most often emerging in immunosuppressed individuals. Its endoscopic appearance—ranging from nodular and polypoid lesions to ulcerations—can be subtle. In addition, histopathological features of KS may mimic benign inflammatory conditions or other mesenchymal tumors, delaying accurate diagnosis. This study aimed to evaluate the histopathological features of GI-KS and to clarify the neoplastic and non-neoplastic diagnostic challenges in a single-center cohort.

Methods: We retrospectively reviewed 13 GI-KS cases diagnosed between 2005 and 2025. Clinical data and endoscopic findings were retrieved from the hospital's electronic medical records. Hematoxylin and eosin-stained sections, along with HHV-8 immunohistochemistry (IHC) slides, were retrospectively evaluated.

Results: Thirteen patients (11 male; mean age 47±18 years) were identified, of whom 84.6% were immunosuppressed (eight HIV-positive, two renal transplant recipients, and one receiving corticosteroids). Cutaneous or extraintestinal KS lesions were present in 11 cases. Endoscopic evaluation revealed nodular lesions (30.8%), polypoid lesions (23.1%), snake-skin–like hemorrhagic areas (7.7%), infiltrative lesions (7.7%), erythematous elevated lesions (7.7%), or nonspecific erythematous changes (7.7%). Suspicion of KS was documented in only three endoscopy reports. Lesions were most commonly located in the stomach (76.9%), followed by the rectum (15.4%) and colon (7.7%). Histologically, slit-like vascular channels and erythrocyte extravasation were observed in 84.6% of cases, hemosiderin deposits in 53.8%, chronic inflammatory infiltrates including plasma cells in 76.9%, and foveolar epithelial hyperplasia in 70% of gastric cases. The histologic spectrum included diagnostic pitfalls such as chronic gastritis–like features in three cases, reactive gastropathy–like changes in one case, granulation tissue–like appearance in one case, and GIST/leiomyoma–like spindle cell morphology in one case.

Conclusion: The histologic features of GI-KS can mimic both neoplastic and inflammatory conditions. Therefore, histopathological evaluation should be conducted alongside clinical information, as GI-KS may present with subtle or nonspecific findings. Given the potential for life-threatening complications such as obstruction, bleeding, or perforation, accurate diagnosis and timely treatment are critically important. Routine application of HHV-8 IHC -even in cases with minimal suspicion- is essential for ensuring diagnostic accuracy, guiding appropriate management, and preventing serious outcomes.

Keywords: Kaposi sarcoma, gastrointestinal tract, endoscopic biopsy, HHV-8 immunohistochemistry, differential diagnosis

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Kaposi sarcoma (KS) is a vascular neoplasm caused by human herpesvirus 8 (HHV-8) infection, predominantly affecting the skin of individuals infected with human immunodeficiency virus (HIV).[1] KS can occur not only in HIV-positive individuals but also in patients receiving immunosuppressive therapy for conditions such as autoimmune disorders or following solid organ transplantation.[2-4]

Visceral involvement can occur, with the gastrointestinal tract being the most common site.[5] Gastrointestinal KS (GI-KS) exhibits distinctive endoscopic appearances, including reddish nodules, polypoid masses, and ulcerated lesions.[3, 6] However, in the absence of a clearly visible endoscopic lesion or if the lesion is in the submucosa, it may easily be overlooked.[7] In addition to being endoscopically inconspicuous, GI-KS can also mimic other tumors histologically or be mistaken for a solely inflammatory process.[8-11]

In this study, we analyzed the histological features of GI-KS and discussed both neoplastic and non-neoplastic lesions that should be considered in the differential diagnosis.

Methods

Patients diagnosed with GI-KS between 2005 and 2025 were retrospectively identified from the pathology archives of our department. Clinical data and endoscopic findings were retrieved from the hospital's electronic medical records. Hematoxylin and eosin (H&E)-stained sections, along with human herpesvirus 8 (HHV-8) immunohistochemistry (IHC) slides, were retrospectively evaluated. The histologic characteristics of the tumors, as well as accompanying features such as inflammatory cell infiltration, hemosiderin deposition, ulceration, and epithelial cell changes were documented.

Retrospective HHV-8 immunohistochemical staining was applied to all paraffin blocks, even those lacking histologically suspicious lesions.

This study was approved by the Ethics Committee of Istanbul University Faculty of Medicine (Approval No: 2025/964, Date: 13.06.2025) in accordance with the Declaration of Helsinki.

Statistical Analysis

Descriptive statistics were used to analyze the data. Categorical variables were presented as frequencies and percentages, while continuous variables were expressed as means and standard deviations (mean±SD). All calculations, including percentage distributions and average values, were conducted in Excel (Microsoft Excel, Microsoft Corp., Redmond, WA, USA).

Results

Patient Characteristics

The study cohort consisted of 13 patients, including 11 males (84.6%) and 2 females (15.4%), with a mean age of 47 years (±18 SD; range: 27-81 years). In five patients, paraffin blocks were referred to our department from another center for consultation.

Of the 13 patients, 11 (84.6%) were immunosuppressed. However, in four cases (30.8%), clinical information regarding immunosuppression status was not provided at the time of biopsy submission. In these instances, the clinical data were retrieved either from the hospital's electronic medical records or by direct communication with the clinician. The underlying immunosuppressive conditions were as follows: eight patients (72.7%) were HIV-positive, two (18.2%) had a history of renal transplantation, and one patient (9.1%) was receiving corticosteroid therapy for IgA nephropathy. One patient had no documented immunosuppressive condition, and the immunosuppression status of another patient, referred to our department for consultation, remained unknown.

In 11 patients (84.6%), a histologically confirmed diagnosis of KS was present in organs /tissues outside the gastrointestinal tract. The distribution of KS involvement in other organs/tissues was as follows: the skin in five patients (45.5%), both the skin and oral mucosa in two patients (18.2%), the oral mucosa alone in one patient (9.1%), both the skin and lymph node in one patient (9.1%), and the lymph node alone in two patients (18.2%) one of which was associated with Castleman disease. Of the remaining two patients, one had suspicious cutaneous lesions, while the other presented with pleural effusion and multiple intra-abdominal, paraaortic, inguinal, and iliac lymphadenopathies, but no pathological sampling was performed from these sites.

Demographic and clinical characteristics of GI-KS cases are summarized in Table 1.

Three patients (23%) underwent ileocolonoscopy, while ten patients (77%) underwent esophagogastroduodenoscopy (EGD). Four patients (30.8%) were symptomatic. One patient presented with rectal bleeding, another demonstrated colonic FDG uptake on PET-CT accompanied by anemia, and two patients complained of dyspepsia. Endoscopic examination was performed for surveillance in nine patients (69.2%) with a prior diagnosis of KS in other organs/tissues, despite the absence of gastrointestinal symptoms; one of these also exhibited esophageal FDG uptake on PET-CT.

Table 1. Demographic and clinical characteristics of gastrointestinal kaposi sarcoma cases

	Age	Gender	Clinic information	Clinic information given to pathologist at first	KS in other organ/tissues (biopsy-proven)	Sites of KS in other organ/tissues
Case 1 (year 2005)	45	E	Renal transplantation (6 months before)	Yes	Yes	Multiple skin lesions, oral mucosal lesions simultaneously
Case 2 (year 2007)	37	E	Renal transplantation	No	Yes	Skin
Case 3 (C) (year 2010)	77	K	No	No	Yes	Multiple skin lesions, prior to GI-KS
Case 4 (year 2011)	81	K	Steroid treatment for IgA nephropathy	Yes	Yes	Lower extremity skin, prior to GI-KS
Case 5 (C) (year 2011)	31	E	Unknown	No	Yes	Multiple skin lesions, prior to GI-KS
Case 6 (C) (year 2012)	65	E	HIV	Yes	Unknown	Suspicious skin lesions present
Case 7 (C) (year 2014)	27	E	HIV	No	Unknown	Pleural effusion, multiple intra-abdominal, paraaortic, inguinal, and iliac lymphadenopathies
Case 8 (year 2015)	34	E	HIV	Yes	Yes	Multiple skin lesions and lymph node involvement, simultaneously
Case 9 (year 2017)	63	E	HIV	Yes	Yes	HHV8 positive Castleman Disease in lymph node
Case 10 (C) (year 2018)	32	E	HIV	Yes	Yes	Multiple skin lesions, prior to GI-KS
Case 11 (year 2022)	40	E	HIV	Yes	Yes	Hard palate, prior to GI-KS
Case 12 (year 2023)	31	E	HIV	Yes	Yes	Axillary lymph node, prior to GI-KS
Case 13 (year 2017)	50	E	HIV	Yes	Yes	Skin and hard palate, prior to GI-KS

GI: Gastrointestinal; C: Consultation; KS: Kaposi sarcoma; HIV: Human immunodeficiency virus.

Endoscopic Findings

Endoscopically, a nodular appearance was observed in four patients (30.8%), a polypoid lesion in three patients (23.1%), and 'snake-skin-like' bleeding areas in one patient (7.7%). One patient (7.7%) had thickened gastric folds with an infiltrative appearance, another (7.7%) had an erythematous elevated lesion, and one (7.7%) showed nonspecific erythema and edema. Endoscopic findings were unavailable in two patients (15.4%).

A suspicion of KS was noted in the endoscopy report of three patients (23.1%). Notably, one patient with thickened gastric folds and an infiltrative appearance was initially suspected to have infiltrative gastric carcinoma or mucosa-associated lymphoid tissue (MALT) lymphoma. In two of the remaining nine patients, endoscopic findings were consistent with pangastritis. No preliminary diagnosis was provided for five patients, and in two cases, neither endoscopic details nor a preliminary diagnosis could be obtained.

Although complete treatment data for all patients were not available, two patients received chemotherapy. During follow-up, only two patients with gastric KS underwent control gastroscopy. Both demonstrated normal endoscopic and histopathological findings.

Endoscopic findings of the patients are shown in Figure 1 and Table 2.

Histologic Findings

GI-KS involvement was observed at the following sites: the stomach in 10 patients (76.9%), across 12 sites (two patients had lesion in the fundus, one in both the fundus and corpus, five in the corpus, one in both the corpus and antrum, and one in the antrum), the rectum in two patients (15.4%), and the colon in one patient (7.7%). During re-evaluation,

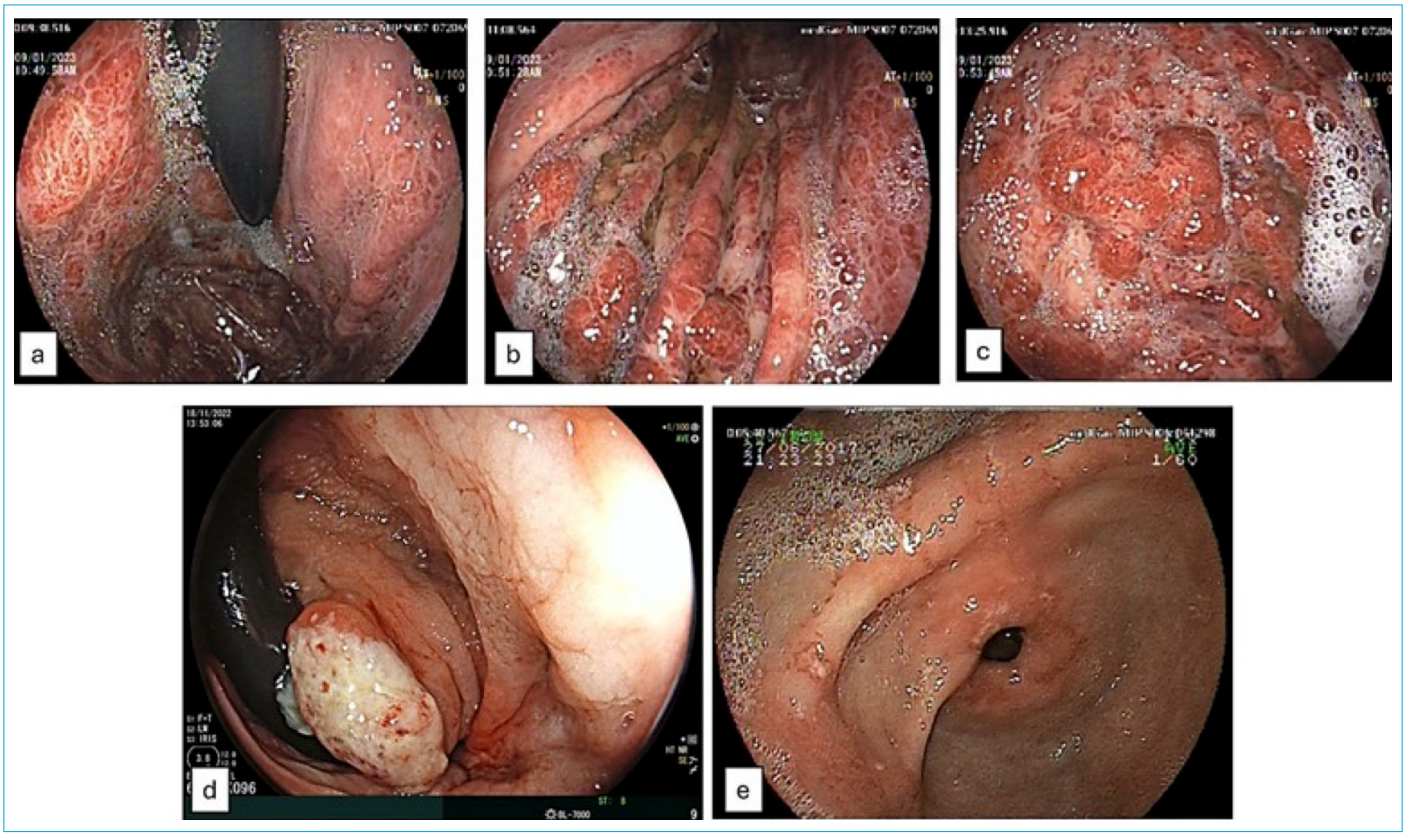

Figure 1. Endoscopic images from cases 12, 11, and 9. Erythematous elevated lesions are observed in the fundus and corpus of case 12 **(a-c)**. In case 11, a 2 cm ulcerated polyp surrounded by fibrinopurulent exudate is visible in the rectum **(d)**. Case 9 shows an erythematous area in the corpus **(e)**.

it was found that in one gastric KS case (Case 8), the lesions were located not only in the fundus but also in the corpus. This additional involvement was identified through HHV-8 IHC analysis, which had not been performed at that site during the initial evaluation.

The tumor was located in both the mucosa and submucosa in six cases (46.2%). In the remaining seven cases (53.8%), due to the absence of submucosal tissue in the biopsies, the proliferation was identified within the mucosa. Slit-like vascular spaces and erythrocyte extravasation were identified within the tumor in eleven cases (84.6%). Hemosiderin deposition was noted in seven cases (53.8%). Lymphoplasmacytic inflammation, with or without accompanying active inflammatory cells, was observed to varying degrees. Plasma cells were observed in ten (76.9%) cases. Ulceration was observed in three cases (23.1%). Among the gastric KS cases (n=10), foveolar epithelial hyperplasia was observed in seven cases (70%) as an accompanying histological feature.

Additionally, Helicobacter pylori was negative in all the gastric KS cases.

Histopathologic findings are presented in Table 3 and Figures 2-6.

First Histological Impressions of the Cases

In three cases (Cases 2, 6, and Case 8 at corpus site), the initial histological impression resembled chronic gastritis (Figs. 2, 3), with case 2 also showing ulceration. In case 12, the histological features closely mimicked reactive gastropathy at low-power magnification (Fig. 4). One of the rectal KS cases (Case 11) resembled inflammatory granulation tissue and was also positive for cytomegalovirus (CMV) on IHC (Fig. 5). In the other rectal KS case (Case 10), ulceration was accompanied by spindle cells and vascular structures, with the spindle cells surrounding the crypts (Fig. 5). This pattern could easily be misinterpreted as granulation tissue or a perineurioma. In one gastric KS case (Case 4), a dense spindle cell proliferation involving the mucosa and submucosa raised a diagnostic suspicion of gastrointestinal stromal tumor (GIST) or leiomyoma (Fig. 6). In the remaining six cases, more usual morphology, spindle cell proliferation, slit-like vascular structures, and varying degrees of inflammation were observed. In some of these cases, thickening of the muscularis mucosae with intermingled vascular spaces initially appeared as a nonspecific finding (Fig. 6).

The histological spectrum and initial diagnostic impressions of all cases are summarized in Table 4.

Table 2. Endoscopic findings of the patients

	Upper or lower GI endoscopy	Endoscopy indication	Endoscopic appearance	Endoscopic diagnosis	Biopsy site	KS site	Control endoscopy or treatment
Case 1 (year 2005)	Upper	Control	Nodular lesion in fundus	Absent	Fundus	Fundus	Normal endoscopy (4 years later),unknown treatment
Case 2 (year 2007)	Upper	Control	Nodular lesions in corpus and antrum	KS?	Antrum and corpus	Antrum and corpus	No endoscopy, unknown treatment
Case 3 (C) (year 2010)	Lower	Colonic FDG accumulation, anemia	Diffuse multiple segmental reddish polypoid lesions involving the ascendant and transverse regions of the large bowel	KS?	Colon	Colon	No endoscopy, unknown treatment
Case 4 (year 2011)	Upper	Control	Sub-centimetric polypoid lesion in corpus	Absent	Corpus	Corpus	No endoscopy, unknown treatment
Case 5 (C) (year 2011)	Upper	Control	Unknown	-	Corpus	Corpus	None
Case 6 (C) (year 2012)	Upper	Dyspepsia	Unknown	-	Corpus	Corpus	No endoscopy, unknown treatment
Case 7 (C) (year 2014)	Upper	Dyspepsia	'Snake-skin-like' bleeding areas throughout the fundus to the antrum	Absent	Duodenum and antrum	Antrum	No endoscopy, unknown treatment
Case 8 (year 2015)	Upper	Control	Thick gastric folds, Lack of gastric motility in fundus	Infiltrative gastric tumor? MALToma?	Duodenum, antrum, corpus, fundus	Fundus, corpus*	No endoscopy, unknown treatment
Case 9 (year 2017)	Upper	Control	Erythema, edema in corpus and antrum	Pangastritis	Antrum, corpus	Corpus	Yes, Normal (1 month later), received chemotherapy
Case 10 (C) (year 2018)	Lower	Rectal bleeding and rectal pain	Ulcerated nodular appearance	KS?	Rectum	Rectum	No endoscopy, received chemotherapy
Case 11 (year 2022)	Lower	Control	Rectal 2 cm in diameter polypoid lesion	Absent	Rectum	Rectum	No endoscopy, unknown treatment
Case 12 (year 2023)	Upper	Control (Esophageal involvement in PET-CT)	Erythematous elevated areas in fundus and corpus	Absent	Duodenum, antrum, corpus, fundus	Fundus	No endoscopy, unknown treatment
Case 13 (year 2017)	Upper	Control	Nodular appearance	Pangastritis	Antrum and corpus	Corpus	No endoscopy, unknown treatment

GI: Gastrointestinal; KS: Kaposi sarcoma; *: Detected during re-evaluation.

Table 3. Histologic findings of the cases

	Site	Layer	Marked atypia/ mitosis	Slit like areas	EE	Hemosiderin	P	L	N	Ulcer	FCH	HHV-8 IHC	*H. Pylori*
Case 1 (y, 2005)	Fundus	Mucosa, submucosa	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Positive	Negative
Case 2 (y, 2007)	Corpus, antrum	Mucosa, submucosa	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Positive	Negative
Case 3 (C) (y, 2010)	Colon	Mucosa	No	Yes	Yes	No	Yes	Yes	No	No	-	Positive	-
Case 4 (y, 2011)	Corpus	Mucosa, submucosa	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Positive	Negative
Case 5 (C) (y, 2011)	Corpus	Mucosa	No	No	Yes	No	Yes	No	No	No	No	Positive	Negative
Case 6 (C) (y, 2012)	Corpus	Mucosa	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Positive	Negative
Case 7 (C) (y, 2014)	Antrum	Mucosa	No	No	Yes	No	Yes	No	No	No	No	Positive	Negative
Case 8 (y, 2015)	Fundus, corpus*	Mucosa, submucosa	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Positive	Negative
Case 9 (y, 2017)	Corpus	Mucosa, submucosa	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Positive	Negative
Case 10 (C) (y, 2018)	Rectum	Mucosa	No	Yes	Yes	Yes	No	No	Yes	Yes	-	Positive	-
Case 11 (y, 2022)	Rectum	Mucosa	No	Yes	Yes	Yes	No	No	Yes	Yes	-	Positive	-
Case 12 (y, 2023)	Fundus	Mucosa	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Positive	Negative
Case 13 (y, 2017)	Corpus	Mucosa, submucosa	No	Yes	No	No	Yes	Yes	No	No	No	Positive	Negative

Y: year; EE: Eritrocyte extravasation; FCH: Foveolar cell hyperplasia; L: Lymphocyte; N: Neutrophile; P: Plasma cell; IHC: Immunohistochemistry.

As demonstrated in this series, a broad spectrum of neoplastic and non-neoplastic inflammatory conditions may be considered in the differential diagnosis of GI-KS, as summarized in Table 5.

Discussion

We conducted a histopathological analysis of GI-KS cases (ten gastric and three colorectal KS cases). In addition, we discussed neoplastic and inflammatory processes that may mimic or lead to challenges in the differential diagnosis.

Most reported cases of GI-KS, including those from our study, occur in male HIV positive patients.[12] However, iatrogenic cases have also been documented. The first iatrogenic case of KS (disseminated visceral KS) in the setting of immunosuppression was reported in 1969 in a patient who had undergone renal transplantation.[4] Subsequent studies have reported an association between immunosuppressive therapy and GI-KS, as also noticed in our study.[3, 13] In our study, three patients were receiving corticosteroid therapy -one for IgA nephropathy and two following renal transplantation.

Other organ/tissue involvement, most commonly cutaneous, frequently accompanies GI-KS.[12] In the majority of our cases (11 out of 13), extra-gastrointestinal involvement was present, predominantly as cutaneous lesions. Additionally, two cases exhibited suspicious skin lesions and lymphadenopathy; however, histological confirmation was not possible due to the absence of tissue sampling from these sites.

GI-KS patients are generally reported to be asymptomatic, as in our cohort.[6, 12] Most patients (10 out of 13) detected during endoscopic surveillance for known a diagnosis of KS at other organs/tissues. However, gastrointestinal complications such as bleeding, perforation, and obstruction can occasionally occur, where one of our patients presented with rectal bleeding caused by a polypoid KS lesion in the rectum.[2, 6, 12, 14]

Although GI-KS has characteristic endoscopic features-such as reddish nodules, polypoid masses, or ulcerated lesions-the tumor may be overlooked if it is submucosal or not visibly apparent.[7, 15, 16] The most common endoscopic finding in our series was a nodular appearance. Other findings included a polypoid lesion, 'snake-skin-like' hemorrhagic areas, thickened gastric folds with an infiltrative appearance, and an erythematous elevated lesion. In addition to being endoscopically nonspecific or inconspicuous, the histomorphologic features of GI-KS may mimic other tumors or be mistaken for a solely inflammatory

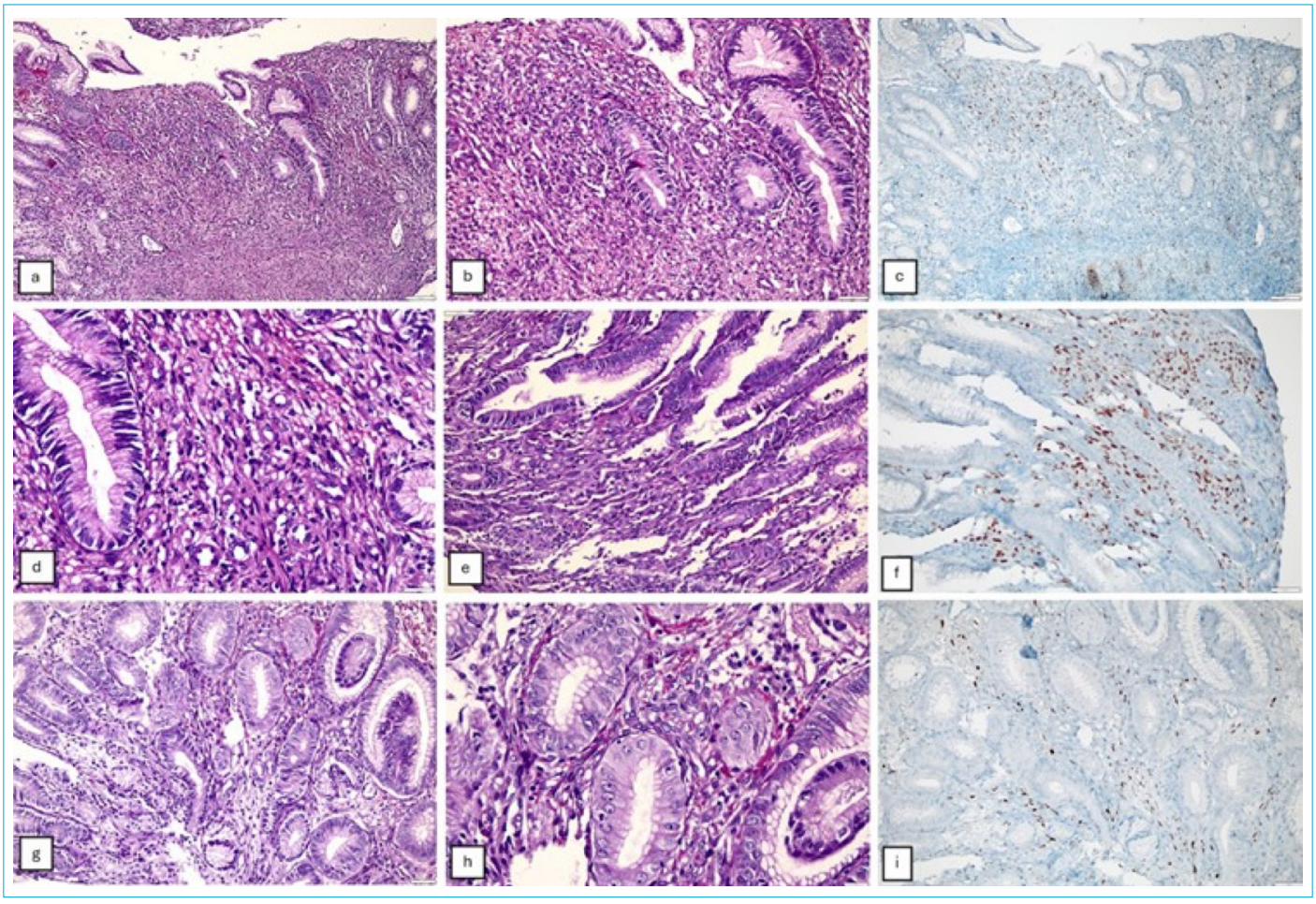

Figure 2. Histopathologic and HHV-8 IHC findings in case 2: **(a)** The initial histological impression resembling chronic gastritis at low-power field; **(b, d, e, g, h)** Subtle bland-appearing spindle cell proliferation intermixed with chronic inflammatory cells at high-power field; **(c, f, i)** Anti-HHV-8 positivity in the spindle cells. (a-f: antrum, g-i: corpus)

process. Given this potential for misinterpretation and the necessity of selecting appropriate treatment to prevent complications, histomorphological findings should be carefully evaluated to avoid misdiagnosis or underdiagnosis.

Histomorphologic variants of GI-KS have not been extensively studied. In a multicenter study involving 46 patients, seven distinct histomorphologic variants were identified in addition to the conventional histology. These included lymphangioma/lymphangiectatic-like, mucosal hemorrhage/telangiectatic-like, mucosal inflammation-like, granulation tissue-like, mucosal prolapse-like, gastrointestinal stromal tumor (GIST)-like, and inflammatory myofibroblastic tumor-like variants.[10] In our study, three gastric KS cases exhibited histologic features resembling chronic gastritis -so called mucosal inflammation-like variant KS. In one of these cases (Case 2), the bland-appearing spindle cell proliferation was subtle and accompanied by foveolar epithelial hyperplasia, which contributed to an initial impression of chronic gastritis with ulceration. Furthermore, the patient's immunosuppression status was not provided to the pathologist, increasing the risk of misdiagnosis.

In another case (Case 8), classic morphology characterized by spindle cell proliferation with slit-like vascular spaces was observed in the fundus. Upon re-evaluation of this case, lesions were found not only in the fundus but also in the corpus. The histological findings in the corpus resembled chronic gastritis and were initially overlooked. The focal atypical vascular proliferation was located at the base of the gastric glands. This additional involvement was detected through HHV-8 IHC staining, which had not been performed on the corpus biopsy during the initial assessment. Either clinical information

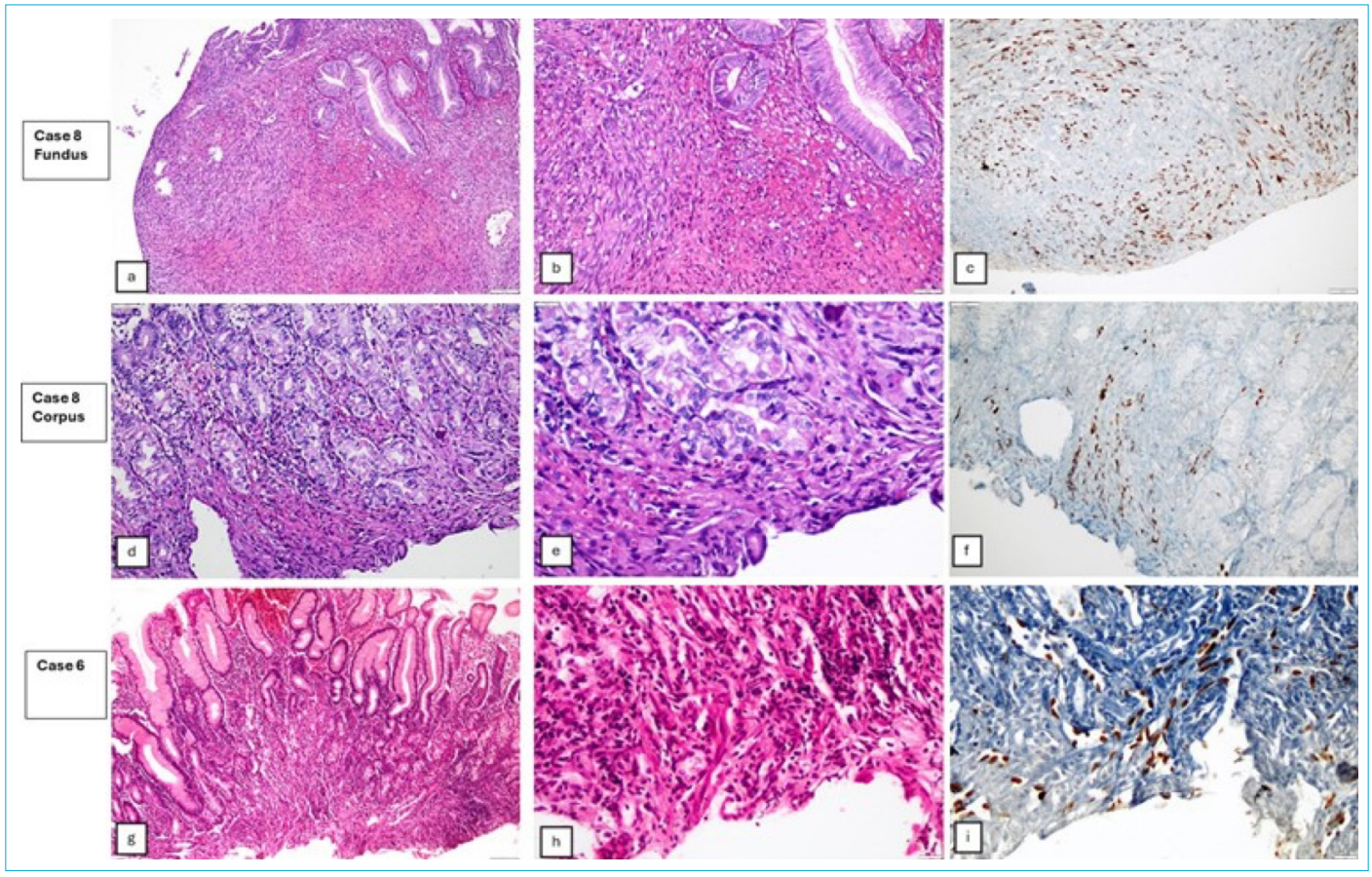

Figure 3. Histopathologic and HHV-8 IHC findings in cases 8 and 6: **(a-b)** Classic morphology characterized by spindle cell proliferation with slit-like vascular spaces in the fundus; **(c)** Anti-HHV-8 positivity in spindle cells in the fundus of case 8; **(d-f)** The focal atypical vascular proliferation located at the base of the gastric glands which was detected through HHV-8 IHC staining **(f)**; **(g)** The initial histological impression resembling chronic gastritis with foveolar epithelial hyperplasia at low-power field in case 6; **(h)** Spindle cell proliferation with slit-like vascular spaces at the base of the glands at high-power field; **(i)** Anti-HHV-8 positive endothelial cells that form slit-like vascular spaces.

or a preliminary diagnosis of KS was provided in all three cases; otherwise, the mucosal inflammation-like variant of KS may be easily overlooked.[10] This highlights the importance of providing clinical information, as it may prompt the pathologist to perform HHV-8 IHC, thereby facilitating an accurate diagnosis. In such cases, performing HHV-8 IHC on all gastric biopsies may improve the detection of KS foci.

In one of our cases (Case 12), the initial impression at low-power magnification was reactive gastropathy[17] due to the presence of polypoid foveolar epithelial hyperplasia, smooth muscle proliferation oriented perpendicularly to the surface, and small vascular structures. Although this case might resemble the proposed mucosal prolapse variant of GI-KS, the absence of characteristic features—such as cystic dilatation of the pit region, thick-walled vessels, and organized thick bundles of arborizing smooth muscle—was not consistent with the histomorphologic criteria described for that variant.[10, 18] It can be suggested that GI-KS may present with a pattern mimicking reactive gastropathy and can therefore be easily overlooked.

One of the cases (Case 11), presenting as a polypoid rectal lesion, histologically mimicked inflammatory granulation tissue. Ulceration was observed on the surface, accompanied by a subtle proliferation of spindle cells. CMV immunoreactivity was notably identified within the granulation tissue. Given that immunosuppression is a common risk factor for both CMV infection and GI- KS, their coexistence is possible.[19] As a result, the granulation tissue-like appearance may be misinterpreted as solely due to CMV infection, potentially leading to the underlying spindle cell proliferation at the base of the ulcer being overlooked.[10]

Several mesenchymal tumors may arise in the gastroin-

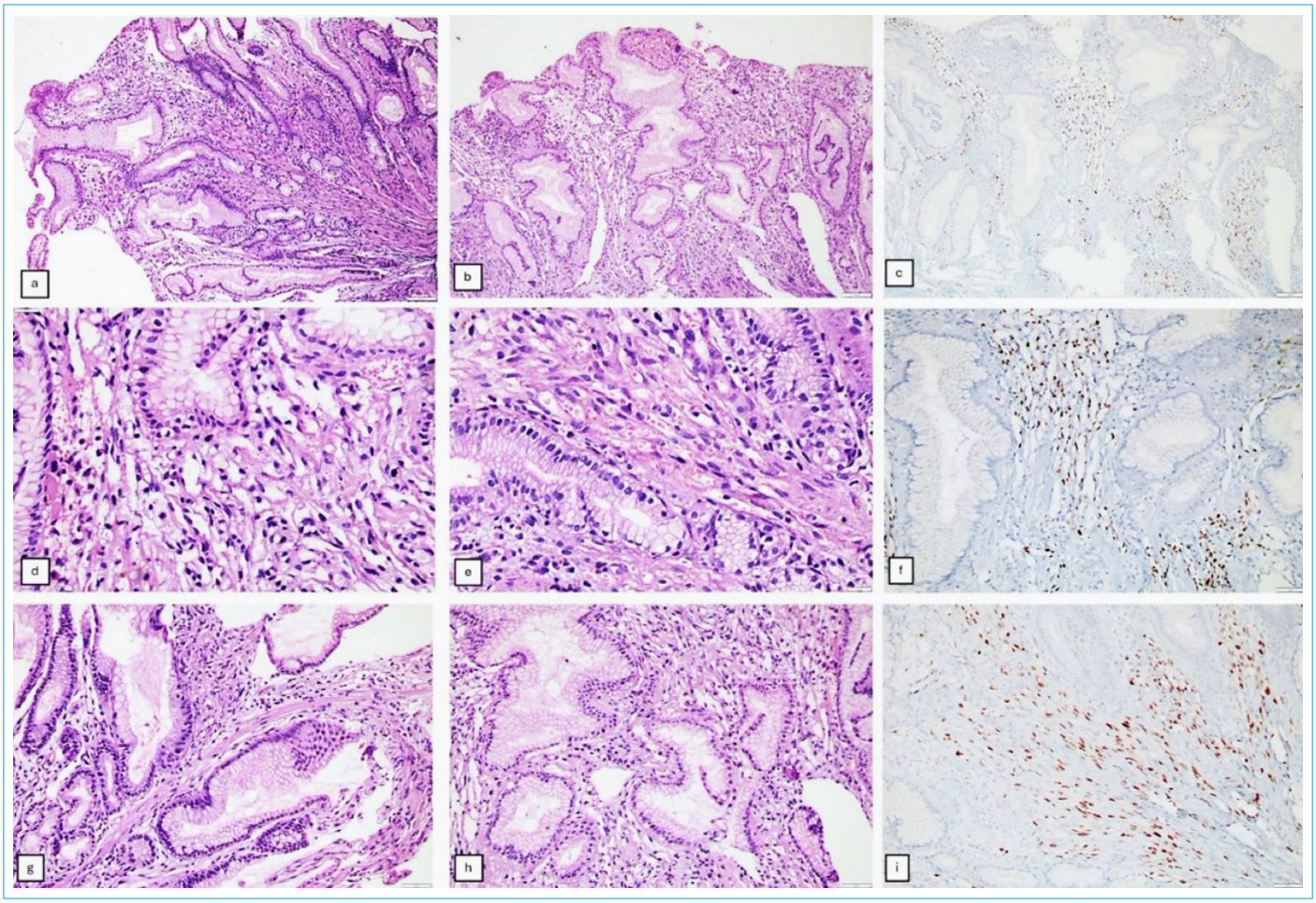

Figure 4. Histopathologic and HHV-8 IHC findings in case 12: **(a-b)** Reactive gastropathy-like appearance with polypoid foveolar epithelial hyperplasia and vascular structures admixed with sparce inflammatory cells in the lamina propria at low-power field; **(d-e)** Small vascular structures in the lamina propria at high-power field; **(g-h)** Smooth muscle proliferation oriented perpendicularly to the surface and small vascular structures in the lamina propria mimicking reactive gastropathy; **(c, f, i)** Anti-HHV-8 positivity in the bland-appearing spindle cells forming vascular spaces.

testinal tract[9] and GI-KS can mimic low-grade mesenchymal neoplasms. In one of our cases (Case 4), dense spindle cell proliferation involving the mucosa and submucosa raised suspicion for GIST or leiomyoma. GIST, the most common mesenchymal tumor in this region, represents a significant diagnostic challenge. Notably, CD117 immunoreactivity-characteristic of GIST-can occasionally be observed in KS as well, potentially leading to diagnostic confusion and misinterpretation.[8, 11] Other tumors to consider in the differential diagnosis include leiomyoma, schwannoma, hemangioma, inflammatory myofibroblastic tumor, perineurioma, and inflammatory fibroid polyp.[20] In case 10, ulceration was associated with spindle cells and vascular structures, with spindle cells surrounding the crypts-an appearance that may resemble, although less likely, perineurioma. Despite overlapping morphological features, each of these entities exhibits distinct histopathological characteristics, and immunohistochemistry remains essential for accurate diagnosis.[9, 16]

Conclusion

The histological features of GI-KS may mimic other neoplastic tumors as well as inflammatory processes. Given that complications such as obstruction, bleeding, or perforation can be life-threatening, accurate diagnosis and appropriate treatment are of critical importance. Histopathological evaluation should be performed in conjunction with clinical information, keeping in mind that GI-KS may present with subtle or nonspecific histological findings. In cases of even minimal suspicion, HHV-8 immunohistochemistry should be performed to ensure an accurate diagnosis.

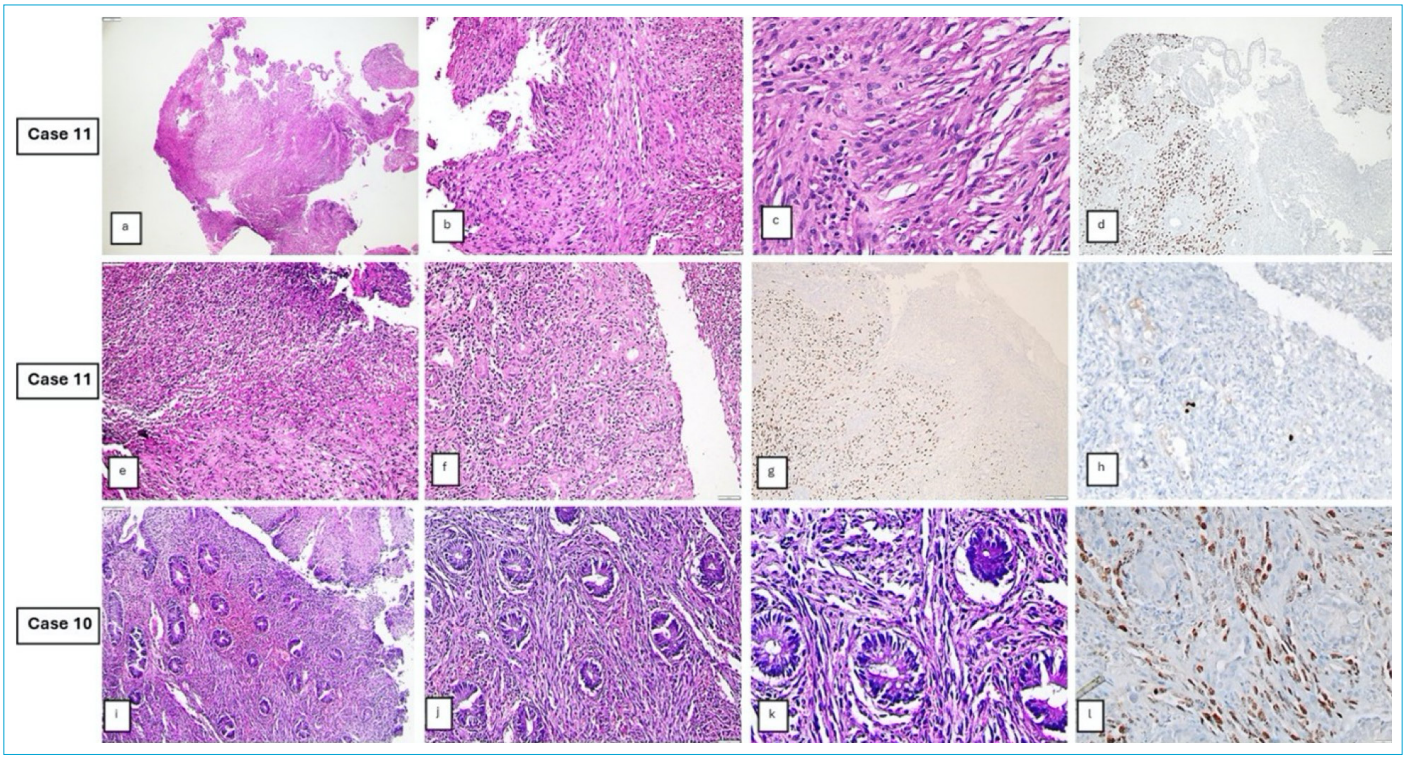

Figure 5. Histopathologic and HHV-8 IHC findings in cases 11 and 10: **(a)** Inflammatory granulation tissue in ulcerated rectal mucosa at low-power field; **(b–c)** Spindle cell proliferation, some forming vascular structures at high-power field; **(d)** Anti-HHV-8 positivity in spindle cells; **(e–h)** Inflammatory granulation tissue with underlying spindle cell proliferation, showing anti-HHV-8 positivity in tumor cells **(g)** and anti-CMV positivity in granulation tissue covering the tumor **(h)**; **(i)** Ulcerated rectal mucosa at low-power field; **(j–l)** Spindle cells and vascular structures surrounding the crypts, showing anti-HHV-8 positivity **(l)**.

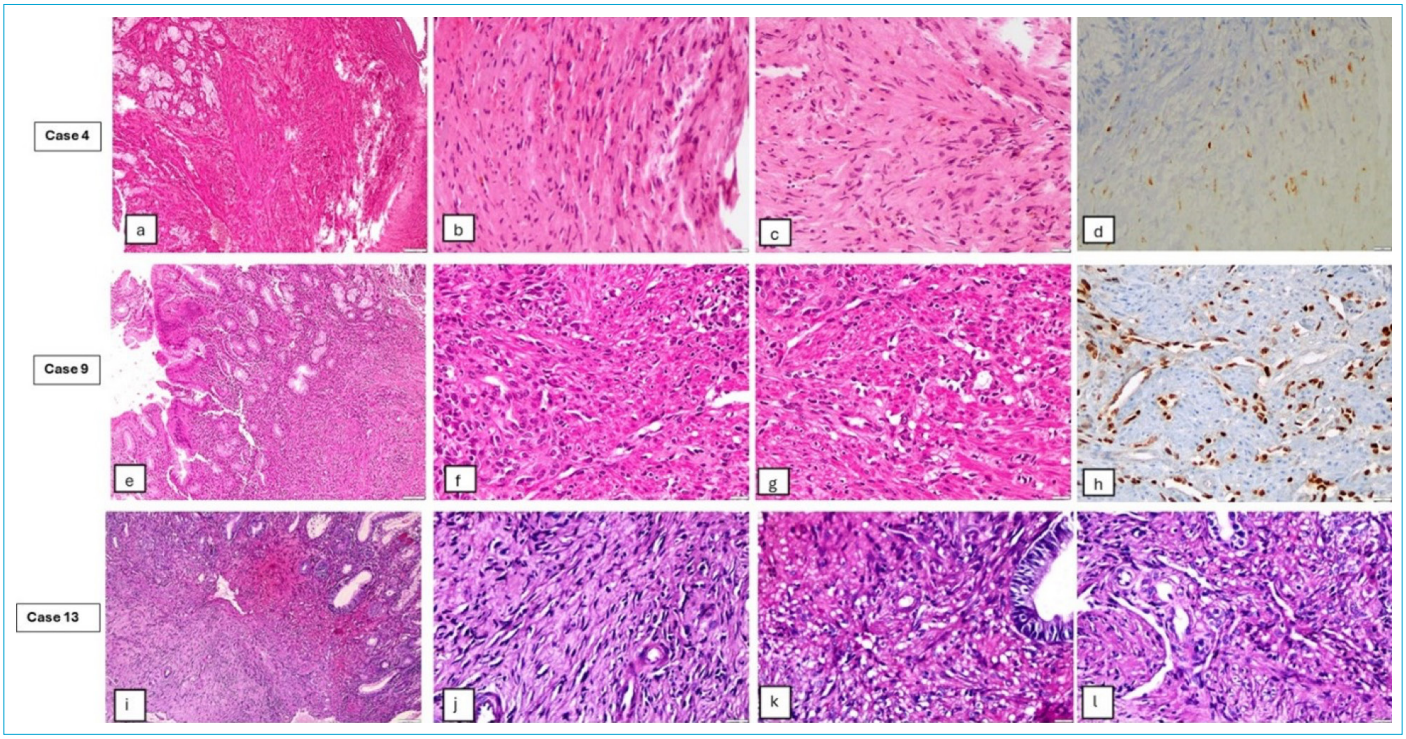

Figure 6. Histopathologic and HHV-8 IHC findings in cases 4, 9 and 13: **(a)** Dense spindle cell proliferation involving the mucosa and submucosa, suspicious for gastrointestinal stromal tumor or leiomyoma, at low-power field; **(b-d)** Spindle cells at high-power field, demonstrating anti-HHV-8 positivity **(d)**; **(e-l)** Slit-like vascular proliferation infiltrating the muscularis mucosa and submucosa, showing anti-HHV-8 positivity **(h)**.

Table 4. The first histopathologic impressions of the tumors

	Site	Included clinic information in endoscopy report	Endoscopic diagnosis	First histopathologic impression	Diagnosis
Case 1	Fundus	Yes	No	Spindle cell proliferation	KS
Case 2	Corpus, antrum	No	KS?	Antrum and corpus: Ulcerative chronic gastritis	KS
Case 3	Colon	No	KS?	Spindle cell proliferation	KS
Case 4	Corpus	Yes	No	Mesenchymal tumor	KS
Case 5	Corpus	No (KS in skin biopsy simultaneously)	No	Spindle cell proliferation	KS
Case 6	Corpus	Yes	No	Chronic gastritis	KS
Case 7	Antrum	No	No	Vascular proliferation at base of biopsy	KS
Case 8	Fundus, corpus*	Yes	Infiltrative gastric tumor? MALToma?	Fundus: Spindle cell proliferation Corpus: Chronic gastritis	KS
Case 9	Corpus	Yes	Pangastritis	Mild chronic inflammation and vascular proliferation	KS
Case 10	Rectum	Yes	KS?	Ulceration with spindle cell proliferation surrounding crypts	KS
Case 11	Rectum	Yes	No	Granulation tissue	KS and CMV immunoreactivity
Case 12	Fundus	Yes	No	Reactive gastropathy	KS
Case 13	Corpus	Yes	No	Spindle cell proliferation	KS

*: Detected during re-evaluation.

Table 5. Differential diagnosis of GI-KS

Tumors	IHC						
	HHV-8	SMA	CD117	CD34	S100	ALK	Others
Kaposi sarcoma	(+)	(-)	(-)	(+)	(-)	(-)	
GIST	(-/+)	(-/+)	(+)	(+)	(-)	(-)	DOG1
Leiomyoma	(-)	(+)	(-)	(-)	(-)	(-)	Caldesmon
Schwannoma	(-)	(-)	(-)	(-)	(+)	(-)	
Hemangioma	(-)	(-)	(-)	(+)	(-)	(-)	ERG
Inflammatory myofibroblastic tumor	(-)	(-/+)	(-)	(-)	(-)	(+)	
Inflammatory fibroid polyp (stomach)	(-)	(-/+)	(-)	(+)	(-)	(-)	Fascin
Perineurioma	(-)	(-)	(-)	(-)	(-)	(-)	EMA, GLUT-1

Infectious/inflammatory conditions; H. Pylori gastritis; Ulcerative gastritis; Reactive gastropathy; Granulation tissue; Inflammatory pseudopolyp; CMV infection.

Disclosures

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