

Unilateral proptosis due to orbital malignancy and synchronous carcinoma elsewhere

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Introduction: Unilateral proptosis is usually a diagnostic challenge to an ophthalmologist. Mass lesions constitute a common cause of unilateral proptosis in elderly individuals in which lymphoproliferative lesions account for 11% and metastasis up to 2- 9% of cases. Literature review showed various tumours metastasizing to the orbit but simultaneous presence of two unrelated tumours in a person are extremely uncommon. The authors wish to report the same to highlight the importance of systemic examination in an elderly patient presenting as unilateral proptosis.

Case Presentation: A 52 year old man presented with complaints of painless, gradually progressing prominence of his right eye (OD) for 8 months. OD showed about 15 degrees of exotropia. Examination revealed an axial proptosis of 6mm by Hertel's exophthalmometry. It was non-tender and non - pulsatile. CT scan of the orbit revealed OD proptosis with enhancing soft tissue attenuation lesion involving extraconal and intraconal compartments in superolateral aspect of the right orbit abutting proximal portion of the right optic nerve. Lacrimal gland could not be distinguished separately from the lesion

Lacrimal gland biopsy revealed stratified squamous epithelium with subepithelium infiltrated by monomorphic population of small lymphoid cells and few immunoblasts suggesting a low grade lymphoproliferative lesion. Immunohistochemical study confirmed a diagnosis of small lymphocytic lymphoma.

Ultrasound abdomen performed for assessment of intraabdominal lymph nodes or visceral enlargement showed diffuse thickening of gastric wall with perigastric lymphadenopathy. An endoscopic antral biopsy revealed gastric adenocarcinoma on histopathological examination.

Conclusion: Diagnosis of two synchronous neoplasms of different etiopathogenesis at sites and exclusion of metastasis is a significant and under-recognized clinical problem. This case highlights the importance of high index of clinical suspicion and thorough systemic examination in the evaluation of a case of unilateral proptosis in an elderly male.

Keywords: Proptosis, lymphoproliferative malignancy, gastric adenocarcinoma, double malignancy

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16 INTRODUCTION

17 Unilateral proptosis is usually a diagnostic challenge to an ophthalmologist. The causes vary
18 to a large extent with Graves' ophthalmopathy contributing to 47% and mass lesions making
19 up 53% of the total cases. Mass lesions constitute a common cause of unilateral proptosis in
20 elderly individuals in which lymphoproliferative lesions account for 11% of cases and
21 metastasis make up to 2- 9% of cases [1,2,3]. Most tumors metastasizing to the eye are
22 carcinomas, although sarcomas, lymphoproliferative malignancies, and melanomas have
23 also been reported. The most common primary carcinomas metastasizing to the orbit are
24 from breast, lung, gastrointestinal tract, genitourinary tract, thyroid, adrenal glands, and
25 cutaneous malignant melanoma. [4,5]. The presenting signs in patients with metastasis to
26 the orbit include proptosis or a painful, palpable mass and ophthalmoplegia. Less common
27 signs of metastatic orbital tumors include diminution of vision, choroidal folds or an afferent
28 pupillary defect.[6] Review of literature showed various tumours metastasizing to the orbit
29 but simultaneous presence of two unrelated tumours in a patient has not been reported. The
30 authors wish to report the same to highlight the importance of systemic examination in
31 unilateral proptosis in elderly.

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34 CASE REPORT:

35 A 52 year old male presented with complaints of painless, gradually progressing prominence
36 of right eye for 8 months [Fig.1]. There was history of squinting of right eye since childhood.
37 There was history of significant weight loss over the past 6 months. On examination his best
38 corrected visual acuity in the right eye was 20/120 and in the left eye was 20/40. There was
39 15 degrees of exotropia in the right eye. Right eye examination revealed an axial proptosis
40 of 6mm by Hertel's exophthalmometry. It was non tender and non pulsatile . Auscultation
41 did not reveal any bruit over the swelling. Anterior segment examination was within normal
42 limits except for a cataractous lens. Fundus was within normal limits. Left eye examination
43 was within normal limits with a posterior chamber intraocular lens. Systemic examination
44 was within normal limits. CT scan of the orbits revealed right eye proptosis with enhancing
45 soft tissue attenuation lesion involving extraconal and intraconal compartments in
46 superolateral aspect of the right orbit abutting proximal portion of the right optic nerve. All
47 extraocular muscles were involved by the lesion and lacrimal gland could not be
48 distinguished separately from the lesion [Fig 2]. Lacrimal gland biopsy revealed stratified
49 squamous epithelium with subepithelium infiltrated by monomorphic population of small
50 lymphoid cells and few immunoblasts suggesting a low grade lymphoproliferative lesion.
51 Immunohistochemistry was performed for panel of small 51 cell Non Hodgkin's lymphoma
52 and the panel comprised of CD3, CD20, CD5, CD 23, and Cyclin D1. The lymphoid cells
53 were negative for Cyclin D1 and CD3 while the rest of the markers were positive confirming
54 the diagnosis of small lymphocytic lymphoma [Fig 3].

55 Systemic examination was normal. His thyroid function tests revealed a normal thyroid
56 profile. Ultrasound abdomen performed for assessment of intraabdominal lymph nodes or
57 visceral enlargement showed diffuse thickening of gastric wall with perigastric
58 lymphadenopathy suggestive of gastric involvement of Non Hodgkin's lymphoma. An
59 endoscopic antral biopsy revealed intestinal type of gastric adenocarcinoma on
60 histopathological examination [Fig 4]. The patient was advised gastric surgery and
61 chemotherapy for further management. The patient refused treatment and was lost to
62 followup.

63 DISCUSSION:

64 Mass lesions constitute one of the common causes of unilateral proptosis in the elderly, out
65 of which lymphoproliferative lesions account for 11% and metastasis account for 2-9% of
66 cases. Orbital lymphoma and lymphoma of the orbital adnexae are relatively rare,
67 representing 0.1% of all lymphomas [7]. Lymphomas of B-cell lineage are more likely to be

associated with ocular symptoms and orbital extension than lymphomas of T-cell or NK-cell lineage [8]. Orbital metastases are generally associated with a bad prognosis and most patients succumb to widespread systemic disease within months [9,10,11]. Orbital lymphomas and metastasis to the orbit typically present with proptosis or a palpable mass causing eyelid swelling [12,13]. Other symptoms include restricted extra-ocular movement, diplopia, and pain. The patient in this report had proptosis and lid edema. Decrease in visual acuity is uncommon unless there is optic nerve infiltration or compression caused by the mass [14]. Our patient had decreased vision due to cataract in the eye. One fourth of patients who present with orbital metastases do not have prior history of cancer [14]. So in this patient provisionally a diagnosis of metastasis to the orbit was considered. Hence a systemic examination was done to rule out any metastasis infiltrating the orbit with specific attention to lung and gastrointestinal malignancies as these malignancies are common causes of orbital metastasis in males [15]. Systemic examination performed for staging of the lymphoma revealed a gastric mass. Biopsy from both sites confirmed that patient had two unrelated primary neoplasms. Careful review of literature shows that synchronous manifestations of two malignancies are uncommon. We did not find any report of unrelated second malignancy in a patient with unilateral proptosis.

Conclusion

The present case had lymphoma in the orbit and synchronous adenocarcinoma in the stomach. This highlights the importance of high index of clinical suspicion and thorough systemic examination in the evaluation of a case of unilateral proptosis in the elderly.

Competing Interest: None to declare

AUTHORS' CONTRIBUTIONS

Dr. Renuka Srinivasan: Critical evaluation of the manuscript

Dr. Rajesh Nachiappa Ganesh: Gastric pathology workup and its photography.

Dr. Praveen Kumar K: Clinical workup

Dr. Praveen Seth: Laboratory investigation including the imaging studies

Dr. D.Basu: Eye pathology workup and its photography

Consent (where ever applicable): Informed consent taken.

Ethical Approval: Taken from the ethics committee of the institute

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APPENDIX

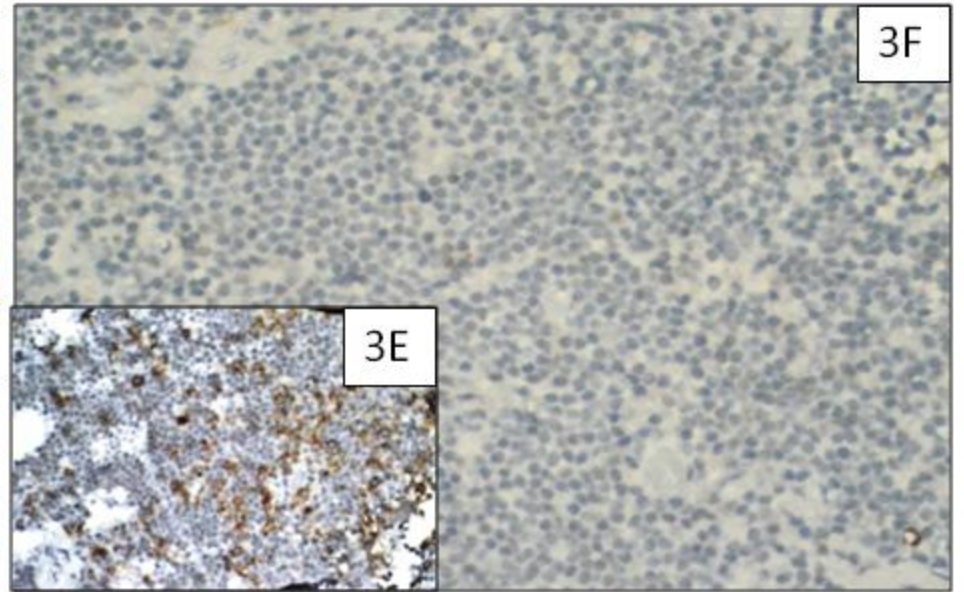
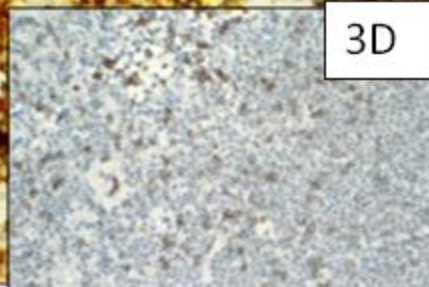
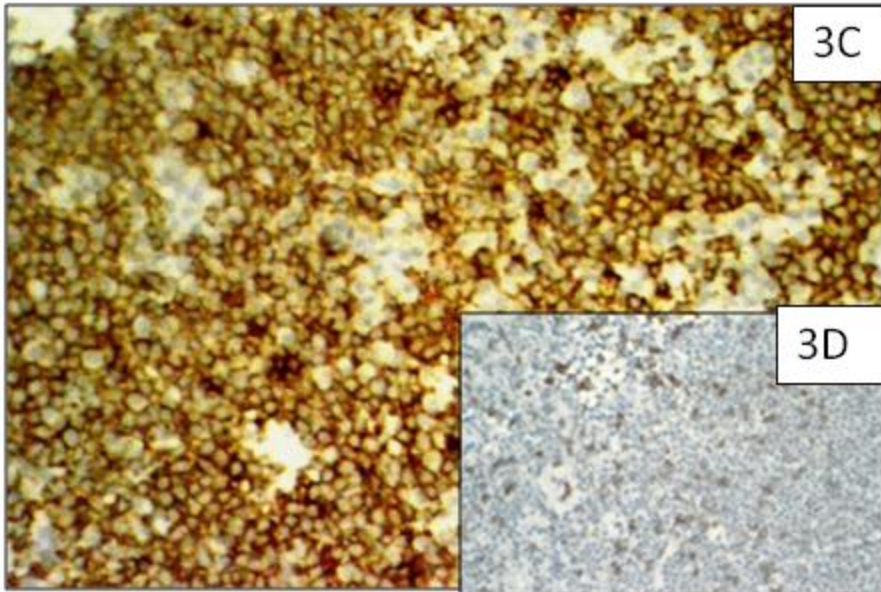
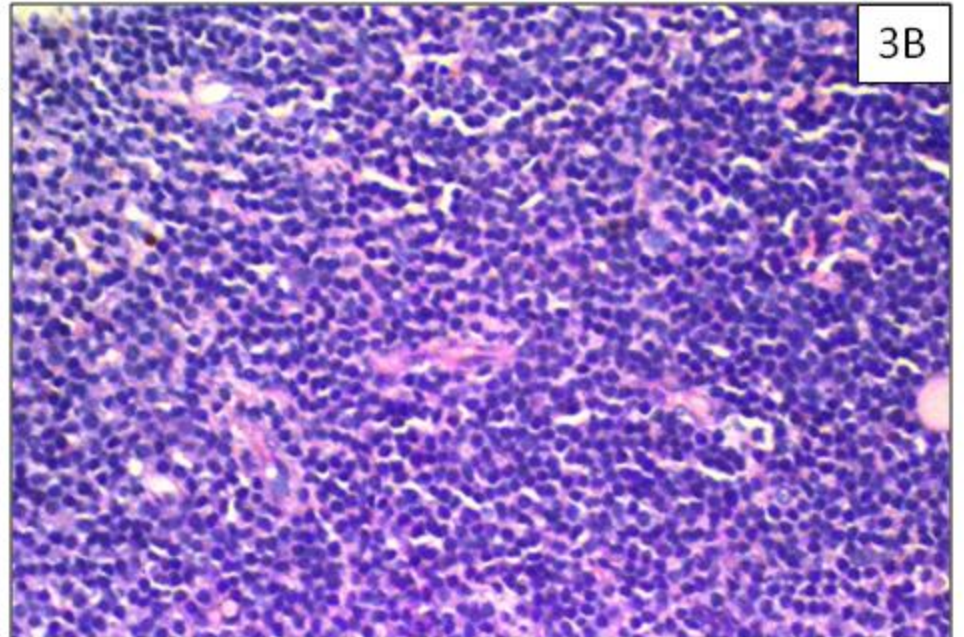
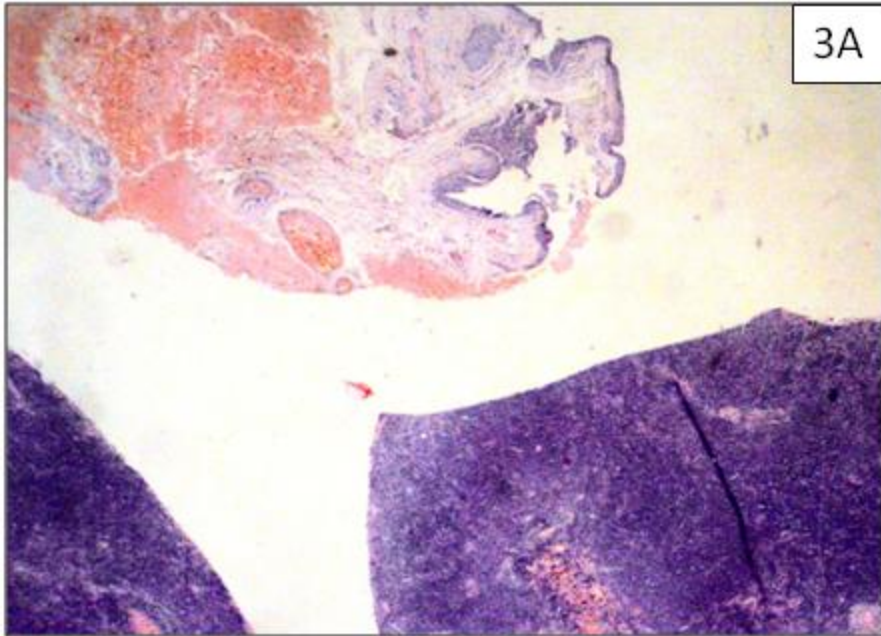


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FIGURE 1 **CLINICAL PHOTOGRAPH SHOWING RIGHT EYE PROPTOSIS**

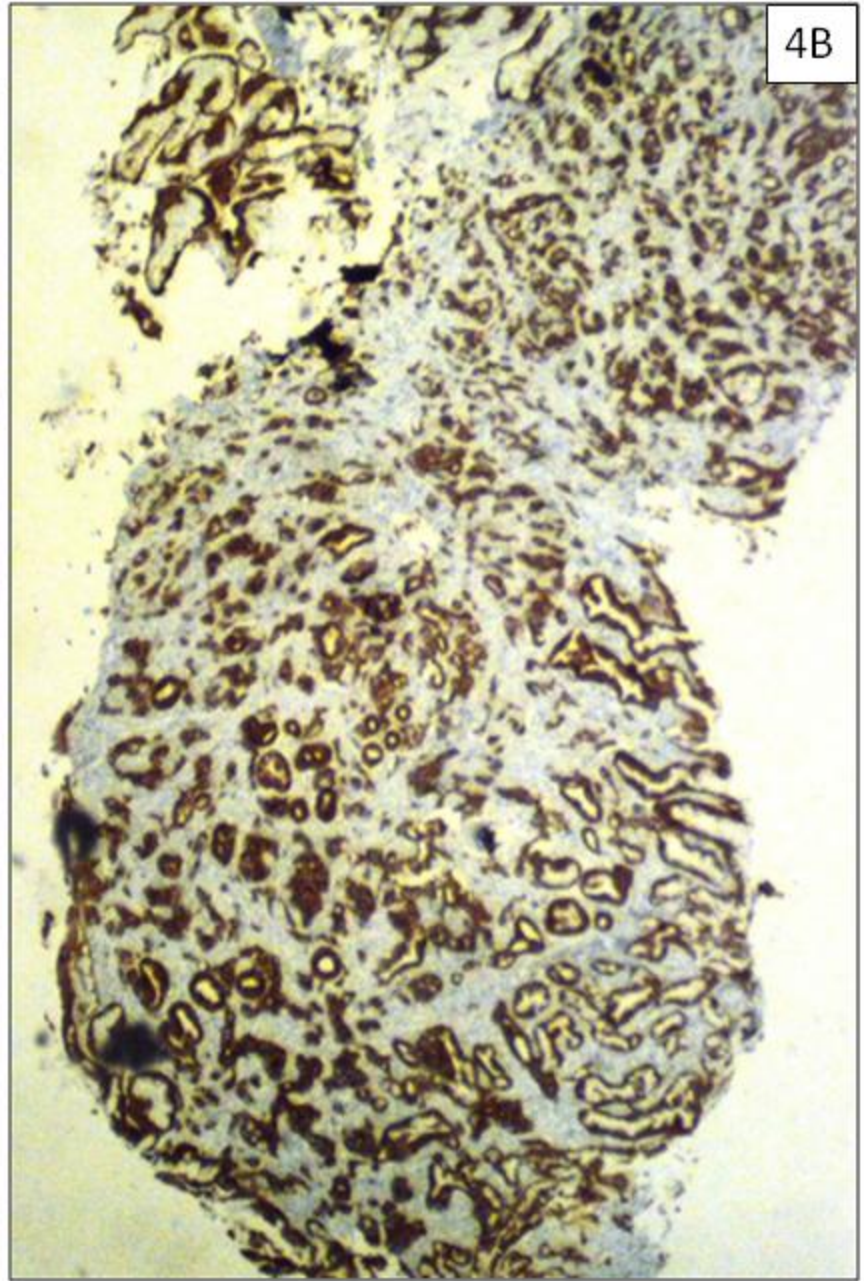
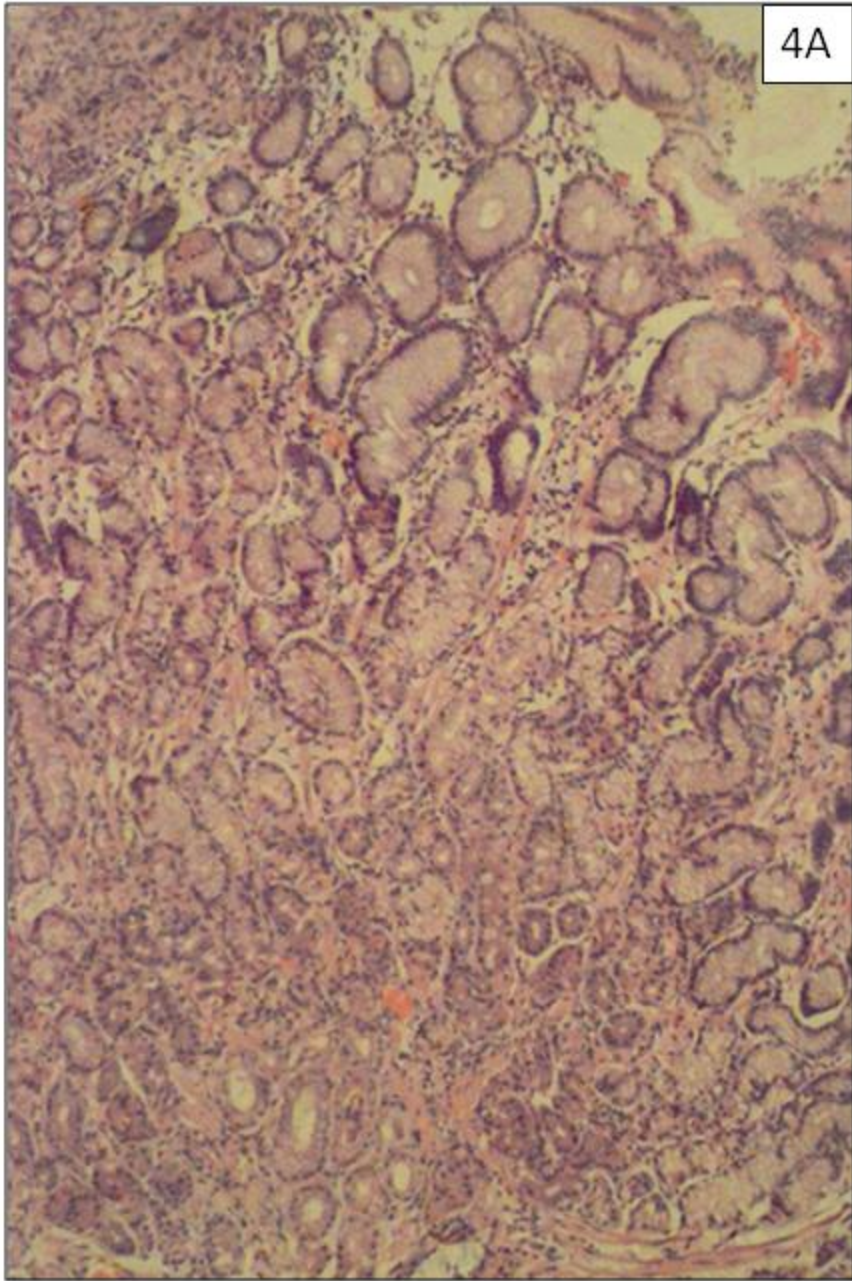


FIGURE 2 CT scan of the orbit revealed right eye proptosis with enhancing soft tissue attenuation lesion involving extraconal and intraconal compartments in superolateral aspect of the right orbit abutting proximal portion of the right optic nerve. All extraocular muscles were involved by the lesion and lacrimal gland could not be distinguished separately from the lesion



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161 Fig 3A – Section shows fragments of conjunctival mucosa with dense infiltration by sheets of monomorphic small round lymphoid cells, x40, Hematoxylin and
162 Eosin.
163 Fig 3B – Section shows sheets of monomorphic small round lymphoid cells with inconspicuous cytoplasm and coarse nuclear chromatin, x400, Hematoxylin and
164 Eosin
165 Fig3C – Section shows strong membranous positivity for CD 20 in lymphoid cells, x400, DAB stain (Immunohistochemistry with DAKO antibody, USA)
166 Fig 3D – Section shows occasional lymphoid cells expressing CD5, x400, DAB stain (Immunohistochemistry with DAKO antibody, USA)
167 Fig 3E – Section shows occasional lymphoid cells expressing CD23, x400, DAB stain (Immunohistochemistry with DAKO antibody, USA)
168 Fig 3F – Section shows negativity for CD3 in lymphoid cells, x400, DAB stain (Immunohistochemistry with DAKO antibody, USA)
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Fig 4A – Section from gastric antral mucosa shows infiltration by tumor cells arranged in glandular pattern, x200, Hematoxylin and Eosin
Fig 4B - Section from gastric antral mucosa shows infiltration by tumor cells arranged in glandular pattern, x40, DAB stain, (Immunohistochemistry with DAKO
antibody, USA)