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A Case of Angiofollicular Lymph Node Hyperplasia

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ABSTRACT

A case of mediastinal lymph node hyperplasia with angiofollicular predominance is presented. Three years before operation the mediastinal process was discovered at routine chest X-ray. The patient, a 23-year-old woman, had no symptoms whatsoever. The specific nature of the process was revealed on histopathological examination. Relevant literature is reviewed.

INTRODUCTION

Since Castleman et al. (1, 2) described a few cases with unusual hyperplasia of mediastinal lymph nodes the number of reported cases with such lesions has continuously increased. In 1967 the total number was 63. Of these, 34 were female and 29 male. Their ages ranged from 8 to 58 years (median age 27 years). The lesions presented as a hilar mass on chest X-ray or a palpable mass. Clinically, only a few patients developed symptoms, usually mild and unspecific (chronic cough, lassitude, vague feeling of pressure). The duration of the lesion prior to discovery ranged from 1 month to 18 years (median duration 4 years). The majority of the tumours, 41, were intrathoracic and the rest, 16, extrathoracic (5). Of the intrathoracic tumours 24 were located in the mediastinum, 9 in the right hilum, 10 in the left hilum, or embedded in one of the lungs. The extrathoracic tumours were found in the neck, in the axilla, in muscles or in the retroperitoneal space (5, 6).

Grossly, the tumours were moderately firm and well encapsulated. Microscopically, several tumours showed no resemblance to a normal lymph node structure. In the cases reported by Castleman et al. (2), however, the normal lymph node architecture was considered preserved. In addition, the lesion is characterized by a predominance of small atypical lymphatic follicles, lack of a sinusoidal pattern, unusual follicular and interfollicular vascularity, Hassall's corpuscle-like follicle centres and absence of anaplastic cells (4).

In this report a further case of angiofollicular mediastinal lymph node hyperplasia in a young woman is presented. Both the clinical picture, with a negative response to the tuberculin test, and the microscopic pattern, with periglandular growth, seem to be somewhat at variance with cases reported earlier. As far as we know, this is the fifth case reported in Scandinavia. The four previous cases were described by Zettergren (7).

CLINICAL DATA

A woman (480514, L. D.), 20 years of age and previously apparently healthy underwent chest X-ray on account of an acute infection with fever and was found to have a mass in the hilus of the left lung extending into the mediastinum. She had no symptoms. Fine needle biopsy showed inflammatory cells. The process gradually increased to the size of an orange. Three years later she was admitted to hospital. She still had no symptoms and routine physical examination on admission revealed nothing abnormal.

Chest X-ray: Preoperatively a tumour the size of an orange was seen lying close to the left main bronchus. The tumour was compressing the bronchus to the left basal lung lobe to some extent. The lung parenchyma did not appear to be involved (Fig. 1 *a–b*).

Laboratory data on admission: Hb 13.6 g/100 ml, white blood cell count 7 000, thrombocyte count 166 000. AST 110 units/ml, ASTA 3.6 units/ml. Tuberculin test was negative (PPD 2 TU 2 × 2 mm) (the test had been positive on several occasions earlier).

Operation: Because of the findings of a mass in the left hilum without definite diagnosis, operation was suggested to the patient. She consented, and a lateral thoracotomy was performed. The pleura was free, as was the mediastinum. In the hilum an orange-sized tumour was seen. The tumour consisted of multiple enlarged lymph glands, and resembled a malignant lymphoma. It was well vascularized and had a fairly well defined capsule. It was decided to remove the tumour and the operation was macroscopically radical. The patient made an uneventful recovery.

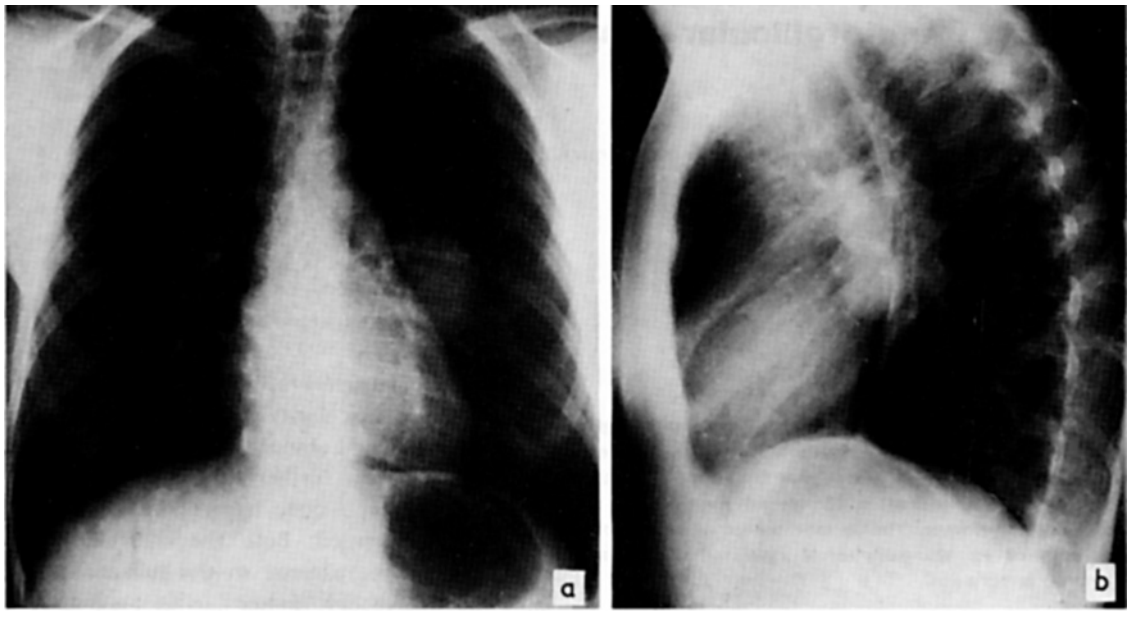

Fig. 1 a–b. Chest X-rays taken preoperatively showing the mediastinal tumour in the left lung hilus.

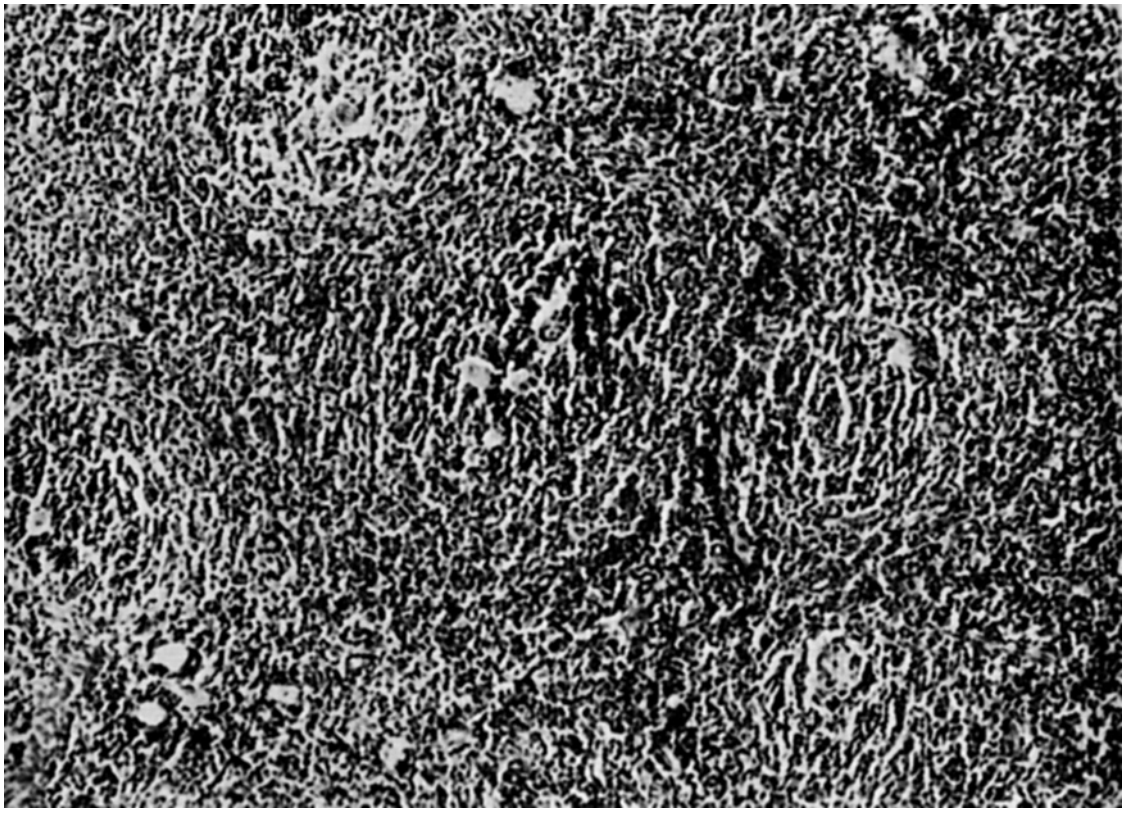

Fig. 2. Survey microphotograph showing the distorted lymph node architecture with predominance of multiple small discrete follicles. Haematoxylin-eosin. × 160.

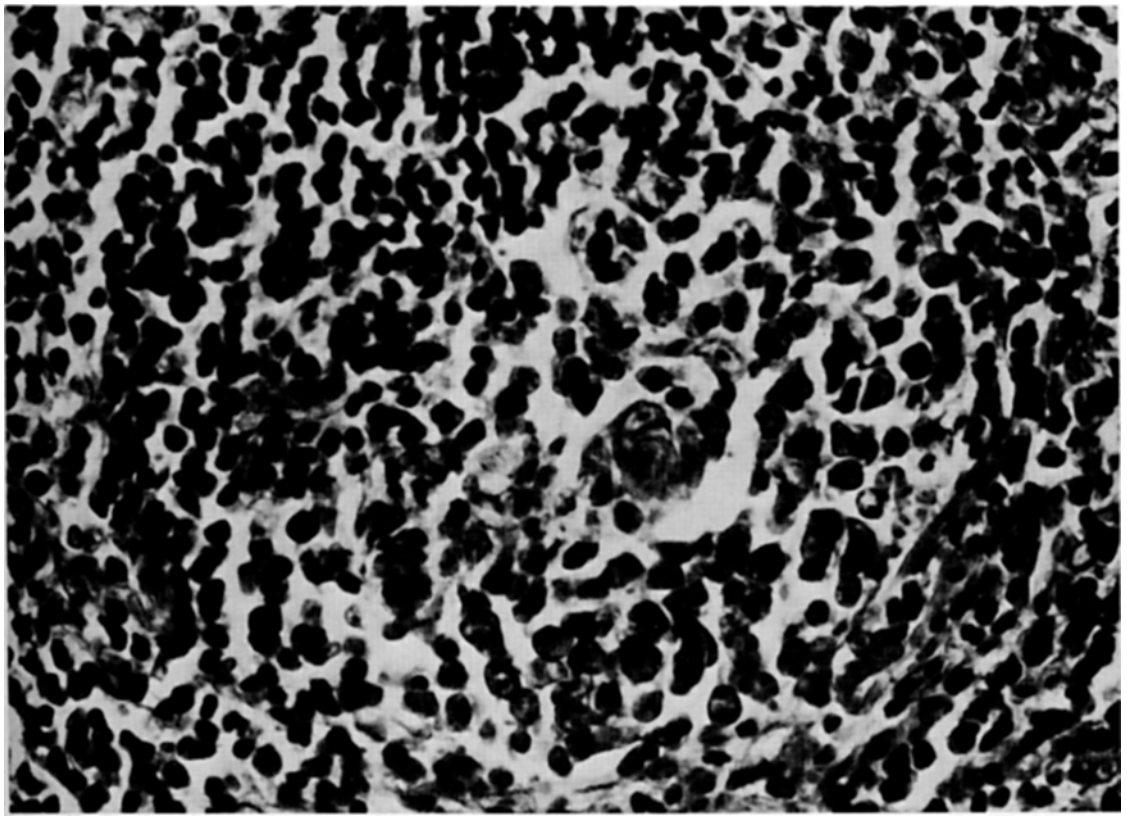

Fig. 3. Microphotograph showing a follicle with lymphocytes in lamella-like arrangement in the outer regions and a few histiocytic cells in the centre. H–E, × 640.

HISTOPATHOLOGICAL EXAMINATION

The removed tissue was soft with a more dense core. The sectioned surface was greyish-red and finely granulated. Microscopically, the normal lymph node architecture was considerably changed. No cortico-medullary differentiation was present. The picture was dominated by frequent irregularly distributed aggregations of ordinary lymphocytes resembling solid or active secondary follicles (Fig. 2). Only a few "normal" follicles were seen, however. The follicles were fairly evenly distributed, though somewhat fewer in the periphery. In the peripheries of the atypical follicles lymphocytes were sometimes arranged in concentric lamellae.

In the centre, a few histiocyte resembling cells or a small vessel were seen (Fig. 3). Some of these follicles contained hyalosclerotic connective tissue, possibly derived from hyalinized vessels. The interfollicular stroma chiefly contained lymphocytes and reticulo-endothelial elements in somewhat varying proportions, although the lymphocytes always predominated (Fig. 4). The reticulo-endothelial elements sometimes formed small channels resembling sinusoids. Numerous vessels of different sizes were present, some with lymphocyte infiltrations in their walls. Small reticulin fibres were observed in these regions (Fig. 5). In some of the vessels hyperplastic endothelium was seen, but the lumen was mostly preserved. No mitoses were noted in the endothelial cells.

No marginal sinus was observed; in some places lymphocytes infiltrated the fibrous capsule and sometimes the surrounding tissue (Fig. 6). No mitoses were seen. No eosinophils, plasma cells or Reed-Sternberg giant cells were observed. Phagocytosis was not seen. Small areas of fibrous tissue were present. No calcifications were observed. Adjacent lymph nodes were seen to contain proliferative sinus endothelium and sinus histiocytes. A few small epithelioid sarcoid resembling granulomas were observed.

DISCUSSION

The case presented above fulfils all the criteria for angiofollicular lymph node hyperplasia. This disease entity is now well established. The aetiology is unknown. In the literature two pathogenetic problems have been discussed: (i) the tissue origin of the lesions, and (ii) the nature of the lesion.

The first cases presented were considered to be thymomas or giant haemolymph nodes. These

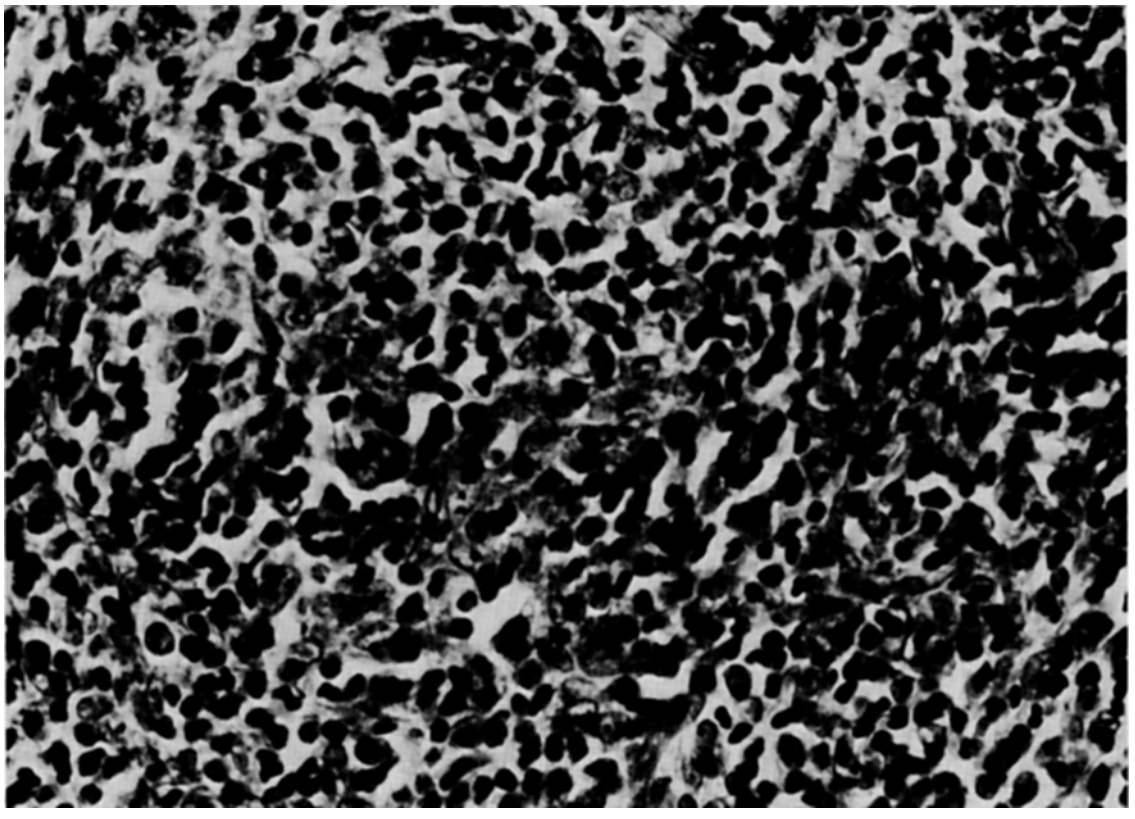

Fig. 4. Microphotograph of the interfollicular tissue showing the reticuloendothelial cells in a net-like arrangement. H-E, × 640.

interpretations have been rejected by several authors (2, 4, 7). The possibility of origin in ectopic splenic tissue has also been denied (4). Most authors seem to agree that this lesion originates in lymph nodes or lymphoid tissue. This has been questioned however, by Lattes & Pachter (4). They considered that the absence of regular sinusoidal architecture and the fact that these lesions also occurred in tissues where lymph nodes are not normally present strongly contradicted the hypothesis that the lesion originates in lymph nodes.

Castleman et al. (2) believed that the mediastinal masses which they observed were hyperplastic lymph nodes caused by a non-specific, chronic inflammatory process. Harrison & Bernatz (3) regarded the lesion as hyperplasia in a lymph node which primarily might have been distorted by mechanical or developmental factors. Zettergren (7) found the possibility of an inflammatory lesion in these cases unlikely, for several reasons: the atypical appearance of the germinative centres, confinement of the lesion to a single lymph node and deficiency of plasma cells in the altered lymph nodes. He considered the lesion to be a benign neoplastic process and designated it as a follicular lympho-reticuloma. The possibility that this lesion is a lymphoma has been refuted by several authors (2, 3). Lattes & Pachter considered that the lesion was neither inflammatory nor neoplastic but represented a development or growth disturbance of a hamartomatous nature with lymphoid components. Tung & McCormack (5) also found a vascular hamartomatous nature probable. They considered the lesion to represent a neovascularized and thereby distorted lymph node.

The appearance of the lesion in the case presented above does not contradict the possibility that it originated in a lymph node. Grossly it was composed of multiple nodules localized in the left lung hilus. Microscopically, the lesion was en-

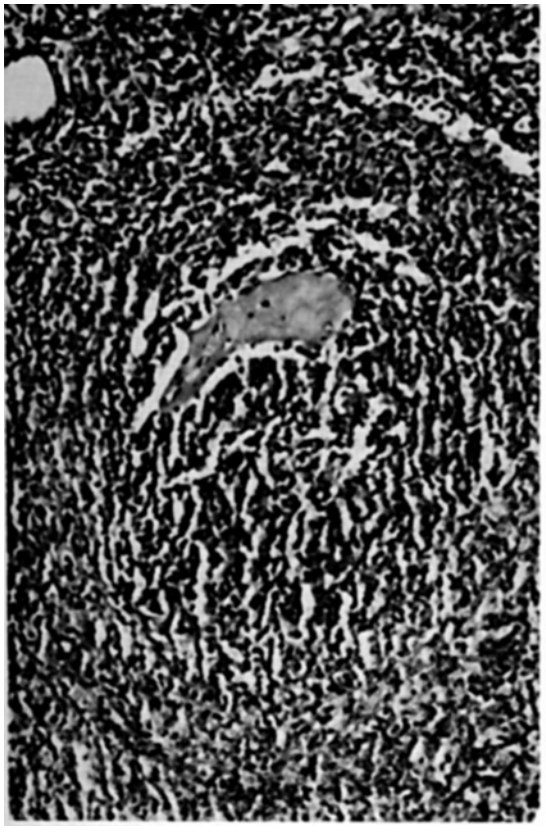

Fig. 5. Microphotograph showing a hyaline mass in the centre of a follicle. H–E, × 320.

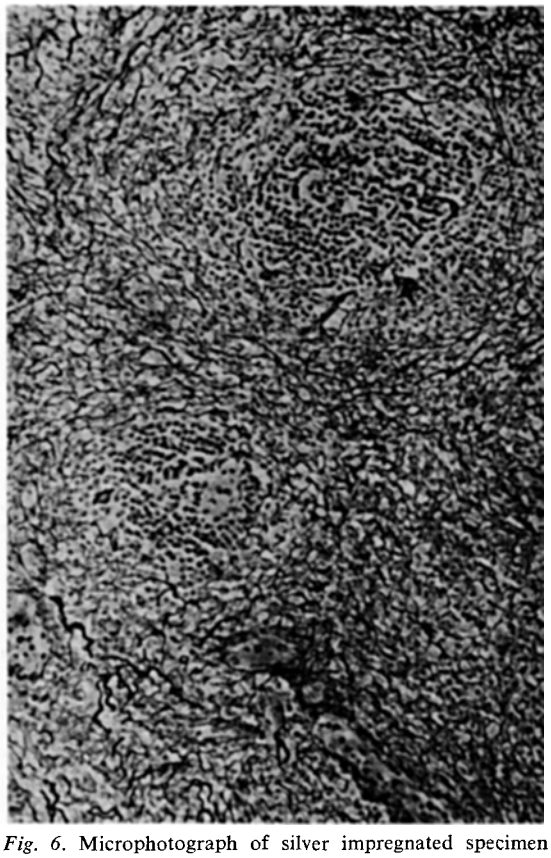

Fig. 6. Microphotograph of silver impregnated specimen showing fine reticular fibres in the interfollicular region. Laidlaw, × 160.

capsulated and dominated by lymphoid tissue, although not with the arrangement of an ordinary lymph node. As to the nature of the lesion, lack of sufficient evidence makes it difficult to express a definite opinion. In this case the lesion was found by chance on a chest X-ray taken just after an acute infection. This might favour an interpretation of hyperplasia due to the inflammation. The tuberculin test was negative at the time of operation and this, instead, would seem to favour a neoplastic or immunologic pathogenesis, if the finding can be attributed any importance. The capsular infiltration and periglandular growth does not support a hamartomatous nature.

The lesion described has been diagnosed earlier as a thymoma, which nowadays is generally agreed to be erroneous. Some practical problems were encountered, however, in diagnosing the case described above. In frozen sections, in view of the capsular infiltration and periglandular growth, the condition was interpreted as a malignant lymphoma. In paraffin sections this diagnosis could not be verified, however.

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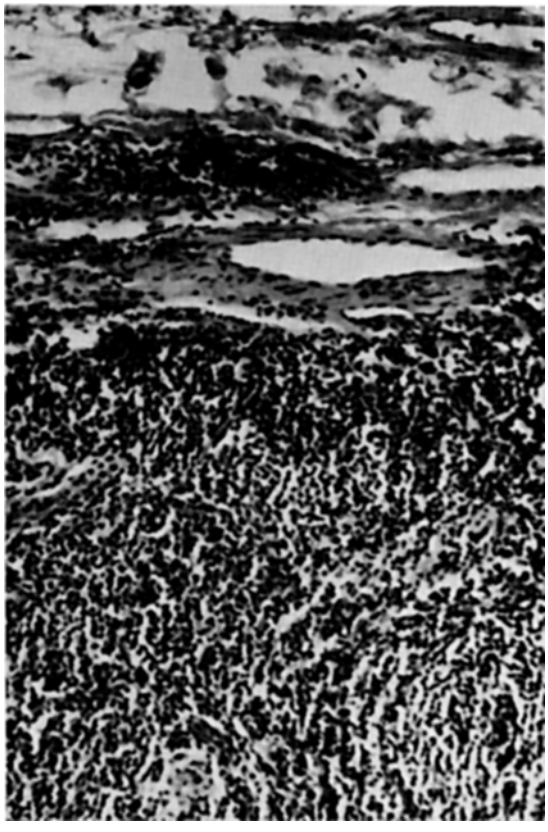

Fig. 7. Microphotograph of the capsular region showing lymphocytic infiltration of the capsule. H–E, × 160.

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