A case of 68 years old Japanese male was reported who was clinically diagnosed senile psychopathy and was found visceral Hodgkin's disease by autopsy. The disease involved thyroid, right kidney, spleen and lymph nodes.

The brain showed no macroscopic and microscopic changes except simple atrophy.

Generally, diffuse involvement of thyroid was rare condition.

In this case, severe degree of diffuse fibrosis with scattered Hodgkin's cells was seen in the thyroid.

It was suggested that senile psychopathy could be related to the diffuse involvement of Hodgkin's disease of the thyroid.

Although Thomas Hodgkin had reported the first case in 1832, at present, pathologic criteria of Hodgkin's disease were not obvious enough yet. Jackson and Parker (1947), Lukes (1966) and other have been proposed the classification of this disease, correlations between the clinical and pathologic conditions, however, the disease have still many controversies.

We would like to report a case of Hodgkin's disease which showed the involvement of thyroid, the involvement of which is extremely rare in this disease.

CASE REPORT

In January 1970, 68 years old male admitted to a hospital for the senile psychopathy. 9th days after admission, he died of acute bronchopneumonia.

Laboratory data were not available.

Autopsy was performed 5 hours after death.

MACROSCOPIC AND MICROSCOPIC FINDINGS

General appearance

The body was that of a poor developed, poor nourished 68 years old Japanese male. The body length was 159 cm and the body weight was 47 kg.

The conjunctiva was moderately anemic. The pupils were round, regular, symmetric and each measuring 0.5 cm in diameter. The lips were cyanotic and oral mucosa was pale.

There was no palpable lymphadenopathy noted externally.

Enlarged thyroid was palpable without engorgement of superficial cervical veins.

Opening the abdominal cavity, the abdomen contains a small amount of
ascitic fluid (about 80 cc). The position of the organs was unremarkable.

The organs were generally congested.
The thorax contained about 1000 cc of yellowish pleural fluid in left side and 100 cc in right side.

**Thyroid**

The thyroid was enlarged and its surface was covered by the fibrous tissue with venous engorgement.

On cut section, the thyroid showed the varied morphologic appearance containing the large amount of interlacing fibrous tissue, thyroid tissue remnants, hemorrhagic areas and hemosiderin deposits (Fig. 1 A, B). Some lymphnodes surrounding the thyroid slightly enlarged.

**The kidney (l. 130 g, r. 120 g)**

The left kidney was stripped with difficulties and revealed red brown irregular surface. The stellate vein was injected. On the surface of left kidney, there was whitish gray lesion measuring 2×1.5 cm in diameter (Fig. 2).

On cut section of its lesion, the boundaries to normal renal architecture was irregular and partly vague. Corticomedullary junctions in both kidneys were not distinct. Renal pelvis was not remarkable.

**Lymphatic system**

Cervical lymphnodes: Few cervical lymphnodes surrounding the thyroid were slightly enlarged but cut surface showed a small, pin pointed gray lesion in cortex. Hilus, paratracheal and mediastinal lymphnode: They were slightly enlarged but are not adhesive. Cut sections revealed anthracosis. Enlargement of intra-pulmonary lymph node was not found. Retroperitoneal lymph-node:

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![Fig. 1](image1.png)

**Fig. 1**

A. Enlargement and diffuse fibrosis of thyroid but no enlargement of cervical, paratracheal lymph node.

B. Almost complete fibrous replacement of thyroid.

![Fig. 2](image2.png)

**Fig. 2** Whitish-gray tumor on the surface of the left kidney.
numerous lymphnodes were enlarged along the abdominal aorta and were adhesive in mass. Those enlarged lymphnodes were replaced by the homogeneous whitish gray lesions throughout the nodes without necroses or hemorrhages.

The spleen

The spleen weighed 120 g.

On cut section the spleen was deep-red in colour and trabecula were not increased. Lymphfollicles were not prominent.

There were a few small necrotic foci.

On routine histologic examination, the thyroid consisted predominantly of diffuse fibrosis with focal remnants of thyroid follicles and lymphoid structure. Some of the follicular remnants revealed the squamous epithelial metaplasia and the other variable sized follicles had the atrophic epithelium with eosinophilic cytoplasm.

In the thyroid a few atypical Hodgkin's cells together with a variable number of mature lymphocytes and few histiocytes were observed different parts of the same section and severe degree of diffuse fibrosis was striking throughout the thyroid (Fig. 3 A, B).

Characteristic microscopic finding of atypical Hodgkin's cell had abundant, slightly eosinophilic cytoplasm and irregular-chromatin-rich-nuclei.

The nucleoli were prominent.

Though Reed-Sternberg cells were diagnostically in Hodgkin's disease, according to Rappaport (1964)\(^0\), typical Reed-Sternberg cells were few in our case.

In retroperitoneal lymphnodes, involvement of lymphnode was diffuse and normal architecture was completely destructed throughout lymphnode, but a portion of destructed lymphnodes showed focal fibrosis. Almost all of lymphnode were occupied by atypical Hodgkin's cells and few lymphocytes.

Small foci of necrosis of irregular configuration were also present but not prominent.

A few lymphnodes surrounding the thyroid were slightly enlarged, but on microscopic examination showed focal involvement of lymphnodes.

Unlike the finding of thyroid, atypical Hodgkin's cells were scattered in a part of the cortex but not with fibrosis.

Histologic findings of the kidney was similar to that of thyroid.

There was severe degree of fibrosis in the middle portion of tumor tissue, but Hodgkin's cell or Reed-Sternberg giant cell was scarcely found in this
fibrotic legion. The area near normal renal tissue had a large number of proliferated atypical Hodgkin’s cells and lymphocytes, with few Reed-Sternberg giant cells (Fig. 4).

Spleen: Large number of Hodgkin’s cells were scattered in red pulp. Admixture of diffuse fibrosis and small necrotic foci was found (Fig. 5).

DISCUSSION

Since Thomas Hodgkin described 7 cases who had the disease characterized by lymphadenopathy and splenomegaly in 1832, many studies have been reported about Hodgkin’s disease.

A major step in classification was the work of Jackson and Parker (1944) who divided this disease into three types: paragranuloma, granuloma, and sarcoma. Though this classification has been used for many years, correlations between this classification and prognosis were poorly demonstrated.

Recently Lukes and Butler (1966) proposed a classification based on the predominant histologic features but

<table>
<thead>
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<td>(1) Paragranuloma</td>
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<tr>
<td>a. Diffuse</td>
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<td>b. Nodular</td>
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<td>(2) Granuloma</td>
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<td>(3) Mixed cellularity</td>
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<td>(4) Diffuse fibrosis</td>
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<td>(3) Sarcoma</td>
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<td>(2) Nodular sclerosis</td>
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<td>(3) Mixed cellularity</td>
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<td>(4) Lymphocytic predominance</td>
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<td>(4) Lymphocytic depletion</td>
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there were controversies whether de-
finite relationships between the histo-
logical findings, clinical stage and sur-
vival rates were present or not. At the
conference on Hodgkin's disease held in
(New York, 1966)5, Lukes and Butler's
classification was modified as follows:
lymphocytic predominance, nodular scle-
rosis, mixed cellularity and lymphocytic
depression.
Relation between this classification
and that of Jackson-Parker is shown in
Table 1.
In our case, several histologic types
were found in the same section. In the
thyroid, the lesion showed histologically
diffuse fibrosis with scattered few
Hodgkin's cells.
In retroperitoneal lymphnodes and
kidney, lymphocytic depression (Hodg-
kin's granuloma) and fibrosis co-existed,
especially lymphocytic depression (Hodg-
kin's granuloma) was predominant in
boundary areas near normal tissue.
The fibrosis varied in character and
distribution in each organ. In our case,
Hodgkin's disease involved the thyroid,
retroperitoneal lymphnodes, spleen, and
left kidney, but the degree of involve-
ment varied in respective organs.
Almost all of areas of thyroid was
affected and was replaced by marked
degree of fibrosis but Hodgkin's cells,
characteristic of the Hodgkin's disease,
were not so prominent.
The homogenous, eosinophilic, PAS-
positive proteineous material that re-
sembled the fibrinoid-like substance was
seen in lymph node with diffuse fibro-
sis.
Hodgkin's disease usually affects
general lymphnodes but the primary
development from extramedullary tis-
ue-liver, spleen, digestive system may
be rarely found. As described, the
thyroid showed obliteration of its pa-
renchym by fibrous tissue in which
there were scattered Hodgkin's cells.
Namely, the lesion of thyroid showed
the terminal phase unlike those in lymph-
nodes, left kidney and spleen.
It was, however, difficult to assume
that thyroid tumor was primary. Pri-
mary Hodgkin's disease involved thyroid
is by far the rarest.
In 1930, Kramer 27 had reported one
case of this condition treated with sub-
total thyroidectomy and X-ray therapy.
Since then, a few have reported in
the world literature.
In Robert and Howard's 17 review of
literature between 1930 and 1960 includ-
ing their own case, 12 cases have been
reported.
Only one additional case has been
reported by Litwin (1970) after that.
In only three cases among them were
detailed clinical and pathological reports
given.
And there were a few cases in which
Hodgkin's disease involving the thyroid
was misdiagnosed as Hashimoto's disea-
se.
In our case, some sections of thyroid
tissue showed the severe degree of fibro-
sis just like chronic thyroiditis, but
there was no lymph follicle formation
characteristic of Hashimoto's disease,
or the feature of intermingled fibrosis
with tumor tissues did not suggest
Riedel's struma.
Unfortunately, no any thyroid func-
tion test in our case had been perform-
ed.
It was conceivable that thyroid hypo-
function would have played a important
role for the development of senile psy-
chopathy.

REFERENCES
1) Jackson, H. and Parker, F.: Hodgkin's
231, 35-44, 1944.
2) Kramer, E.: Beitrag zur chirurgie der


