Solitary Plasmacytoma of the Lung*
— Report of a Case —

Man Sil Park, M.D.**, Young Pil Wang, M.D.**, Se Wha Kim, M.D.**, Hong Kyun Lee, M.D.**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

— Abstract —

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.

**

**장근태*·*양필**·*김서화**·*이홍균**

Solitary plasmacytomas of the lung are extremely rare, and are sorts of plasma cell dyscrasia which are characterized by the elaboration of excessive amount of immunoglobulin or their constituent units.

We experienced one case of plasmacytoma on the left lower lobe which was treated by left pneumonectomy. It was proven that the plasmacytoma produced immunoglobulin M and kappa chain by immunofluorescent technique. During the follow up period, 2 1/2 years after surgical removal of tumor mass, there were no local recurrence and dissemination.
Fig. 1. Posteroanterior roentgenogram of the chest reveals a sharply circumscribed tumor mass in the left lower lobe measuring 8.5cm x 6cm.

Fig. 2. Bronchogram reveals completely obstructed bronchus of the left lower lobe just below the superior segment of the left lower lobe. The bronchial trees of the ligular division and superior segment of the left lower lobe are displaced by tumor mass.

Fig. 3. Photogram of tumor demonstrating uniform sheet of plasma cells. Note giant form in center (H & E, x400)
으로 형질細胞腫의 빈도를 확인하였다.

多發性 健髄腫(multiple myeloma)이나 孤立性 健髄腫의 腫瘤 轉移를 계외하기 위해 頭盖骨 外에 全身의 骨組織의 X-線 撮影을 施行하였으나 異常 所見은 發見され지 않았다. 形質細胞의 增加를 볼 수 있을 뿐 특이한 所見은 없었다.

手術後 施行한 血清蛋白 電泳測定에서는 일부만 49.4% , α₁-ωloblobulin 5.7%, α₂-ωloblobulin 9.9%, β-ωloblobulin 13.7%, γ-ωloblobulin 21.3%로 形質細胞이 增加되어 있었으나 M-成分 特有の 높고 唯一의 peak는 形成하지 않았다. 이에 施行한 血清의 免疫電泳測定에서는 여러한 免疫ωloblobulin이 增加되었는데 서울하는데 失敗하였다. 그러나 免疫蛻光法과 peroxidase-anti-peroxidase法을 利用한 細胞検査에서 免疫ωloblobulin M과 kappa輕鎖(light-chain)를 生産하는 形質細胞腫임을 알 수 있었다.

患者는 手術後 27病日に 退院하였으며 現在 2年 6個月間 後観察에서 頭蓋骨의 增悪再発이나 擴散 없이 全身 狀態가 良好하게 生活하고 있다.

考 按

骨髄外 形質細胞腫(extramedullary plasmacytoma)은 드문 疾患으로 副鼻腔을 包含한 上気道에 好発하여 ①,⑦,⑧,⑩,①,②,③,④,⑨,①,④,⑩,⑪,⑫,⑬,⑭,⑮,⑯) 腫瘍는 극히 드물게 發生한다.⑤,⑥,⑦,⑧,⑨,⑩,⑪,⑫,⑬,⑭,⑮,⑯
男女의 發生 比率은 약 3:1로 男子에게서 多発하고 ②0) 年齢別로는 50代, 60代에서 好発한다.

形質細胞에서 發生하는 異常은 多発性 健髄腫(multiple myeloma), 孤立性 健髄腫(solitary myeloma), 健髄腫(extramedullary plasmacytoma), 形質腫 白血病(plasma leukemia)과 미만성 形質細胞腫(diffuse myelomatosis)으로 分類되어 이들은 IgM, IgG, IgD, IgA, IgE 5 가지의 免疫ωloblobulin의 어느 한가지의 免疫ωloblobulin을 過度히 生産하여 特性을 가지고 있어 monoclonal gammopathy라 부르기도 한다.

電泳腫瘤을 施行하여 보면 增加된 血清 免疫ωloblobulin이 唯一의 쪽은 spike를 形成하여 이를 myeloma protein 혹은 M-protein이라 부른다. 이런 M-protein은 僞生된 形質細胞腫의 약 90%에서 나타나는 것으로 알려져 있으며 IgG를 過度히 生産하는 疾患에 가장 흔하다.

또한 免疫ωloblobulin의 構成 成分인 輕鎖를 生産하여 이 輕鎖가 尿中に 나오게 되면 特異한 性質을 나타내게 된다.

著者들은 經験한 症例에서는 M-protein이나 Bence-Jones protein은 観察할 수 없었으나 免疫蛻光顯微鏡을 利用한 免疫ωloblobulin 標識検査에서 形質細胞腫이 免疫ωloblobulin M과 Kappa형의 輕鎖를 生産하는 것을 확인할 수 있었다.

이상과 같은 形質細胞의 發生 原因으로 別個의 疾患 인지 아니면 同一한 疾患인지에 韓에서는 論難이 있으나 Helmus는 ①) 이들 相互間의 關係를 도표(Fig. 4)

---

Fig. 4. The interrelationship of the various plasma cell tumors suggested by Helmus.

Bone marrow progenitor cells → Extramedullary progenitor cells
↓
Solitary myeloma ▶ Diffuse myeloma ▶
Multiple myeloma ← Extramedullary myeloma

---

Fig. 5. The relationship of the various plasma cell tumors suggested by Batsakis.
와 같이 설명하였고, Basakis 등20은 (Fig. 5) 形質細胞腫是 分布하는 場所에 따라 2가지의 元祖細胞에서 각각의 形質細胞腫이 發生하다고 생각하였으나, 最近에는 骨髄外 形質細胞腫이 上頜骨에서 主로 나타나고 轉移 되는 様相이 多發性 骨髄腫과 다르게 나타나며 治療에 對 損害하는 것으로 보아 別個의 疾患으로 把握 하려는 傾向이 있다8,20).

Snapper 등은 의하면 97例의 形質細胞腫是 1例만이 骨髄外 形質細胞腫이 發生하였음을 發表하였고, Carson 등3)도 90例의 形質細胞腫은 12例만이 骨髄外組織에서 發見되었고 報告한 것으로 보아 骨髄外 形質細胞腫은 訓練疾患임을 알 수 있다.

이러한 骨髄外 形質細胞腫은 Wiltshaw에 의하면 大部分이 上頜骨에서 發見되었고, 一部가 上頜骨17,18), 淋巴腺 및 腫瘤 등에13) 서 發見되었고, 肺에서 形質細胞腫이 發見된 경우는 극히 드물어 1944년 Gordon이 처음 報告한 이래 全世界으로 10여例의 報告가 있을 뿐이 다2,4,9,12,14,15,18).

肺에서 發生한 形質細胞腫의 症狀은 文獻에 의하면 症狀없이 肺X線에서 腫瘤이 發見된 경우14,15), 가슴, 發熱2,9), 體重減少2), 疲勞感18), 呼吸困難9,12,18), 嘔吐感等이 병 特有의 症狀보다는 肺의 氣管支閉鎖 에서 오는 一般的인 症狀을 보였다.

単純 胸部 X線 film에서 나타나는 腫塊 및 形態과 類似하게 나타나며 前胸 骨腸이나 肺 骨腸에서 發生하여 闭鎖을 일으키기도 한다2,4,9,12,14,15,18).

尿検査에서는 Bence-Jones protein을 밝출할 수 있 는 경우가 있으며 血漿의 電氣泳動에서 增加된 免疫 글로불린의 줄고 단일 spike를 形成하는 M-componen t가 나타나는 경우가 있으며21,19) 免疫電氣泳動을 施行하면 이의 免疫 글로불린이 增加되었는가를 알 수 있 다2,19).

組織學的으로 形質細胞腫은 形質細胞肉芽腫1,24) (plasma cell granuloma)과 難別를 야하며 形質細胞腫 이 形質細胞腫으로 構成되어 있는데 만약 形質細胞肉芽腫은 組織球, 淋巴球, 細胞外細胞와 形質細胞 師로는 巨大細胞들이 混合되어 나타난다.

治療는 外科的으로 腫瘤은 除去하는 法、放線線 治療와 化學療法等 3가지가 있으나 Wiltshaw에 의하면 모두治療에 잘 損害하는 것으로 報告하고 있다(Table -1).

Wollersheim等은21) 骨髄外 形質細胞腫은 放射線治療가 最善의 方法이라 있으며 放射線 治療을 施行하였음에 

<table>
<thead>
<tr>
<th>Table 1. Treatment of the primary site and the incidence of local recurrence extramedullary plasmacytoma.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial treatment</strong></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Surgery</td>
</tr>
<tr>
<td>Radiotherapy</td>
</tr>
<tr>
<td>Surgery and radiotherapy ± chemotherapy</td>
</tr>
<tr>
<td>Chemotherapy alone</td>
</tr>
</tbody>
</table>

을 경우 10년 生存率이 50% 이상이라고 했다. 그러나 手術을 施行하였던 6名의 患者도 그 結果는 満足스러운 것으로 1名이 手術後 52個月後에 死亡하였으며 나머지 5名은 15個月에서 135個月이 지남 후까지 生存하였다. 報告한 바 있으며 著者例에서도 手術後 2年 6個月이 지남 現在까지 所見 을再発이나 擴散되지 全身 狀態가 良好하게 生活하고 있다.

結 論

本 가톨릭大學 醫學部 胸部外科教室에서는 肺에 發生한 孤立性 形質細胞腫 1例를 手術治癒하였기에 文獻 拷観과 함께 報告하는 바이다.

REFERENCES


