臨　　床

頭蓋骨内ニ發育セル癌細胞ノ頭蓋内ヘ向ツテノ浸潤態度

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Spreading of Carcinoma Cells through the Dura

By

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Patient : 43 years old female.

Admitted to our clinic on Aug. 23, 1941.

Five months previously she was operated on for cancer of the right breast. Since that time she has gradually got visual disturbances of both eyes and occasional nausea and vomiting. Four weeks ago there appeared in the left parietal region a hard tumor which has been rapidly increasing in size with neuralgic pains of the left half of the head.

On admission operative scars of the right chest were present from a radical amputation for breast carcinoma. There was a hard pulsating tumor as large as an apple in the left parietal region (Fig. 1 and 2). Subcutaneous veins around the tumor were tortuous and engorged. There were no pains on palpation.

As a result of marked papilledema both eyes were practically blind. Exophthalmos on both sides. No motor or sensory disturbances.

X-ray pictures of the skull showed corresponding to the location of the tumor a large bony defect surrounded by wide areas of worm eaten appearance (Fig. 3 and 4).

The diagnosis was metastatic carcinoma of the left parietal bone fellowing carcinoma of the right breast.

Operation on Aug. 27, 1941.

When a skin flap over the tumor was turned down, profuse bleeding occurred from dilated subcutaneous veins. Circumcision of galea and periosteum and rongeuring the bone around the tumor were also met with heavy bleeding. During this procedure it was found that carcinomatous infiltration in the neighboring bones had extended much further than we had expected before the operation, so that it was impossible to remove the peripheral infiltration.

In the explored region the dura was hardened and rough and more than 0.5 cm in thickness. After incising the dura around the tumor, an attempt was made to dissect the tumor with dural attachment from the surface of the brain, but it had to be abandoned, because of

uncontrollable bleeding. The tumor was then dissected, for the most part, in the cleavage line between the inner and outer tables of the dura, thus leaving the subdural infiltration (Fig. 5).

The removed portion of the tumor (Fig. 6 and 7) measured 12×9×4 cm and weighed 200 gm. The upper surface of the tumor was attached directly to the galea and the lower surface to the dura. In the interior there were numerous bone fragments.

Histologically the tumor was an adenocarcinoma, consisting of cuboid cells for the most part and spindle cells in some portions (Fig. 8 and 9).

The patient gradually lost ground and died 3 weeks after the operation. At autopsy the dura covering the whole hemisphere of the left side was found to be strikingly thickened due to diffuse carcinomatous infiltration of the subdural space and adherent to the underlying cortical surface (Fig. 10). There was a softened area in the region of left internal capsule but no metastastatic focus within the brain.

In spite of the fact that carcinomatous masses were found both above and beneath the dura, the dura itself appeared relatively intact. In histological preparations the dura was found to show no diffuse infiltration of carcinoma cells, but some of the blood vessels passing across the dura were filled with carcinoma cells (Fig. 8). This showed that the spread of carcinoma cells through the dura had occurred exclusively by way of these vessels.

From the point of surgery, this would lead to the conclusion, that, when a carcinoma, primary or metastatic, has infiltrated near the dura, for the sake of radical cure, the dura of this portion, even if it appears intact, should be excised completely, since some of the tumor cells may have possibly involved the subdural space through the blood vessels.

症 ノ 例

患者：43歳ノ女，昭和16年8月23日入院。

主訴：視力障碍。

病歴：昨年9月，右側乳房ニ手拳大，無痛性ノ腫瘤ヲ生ジ，ヤガテ同様ナル無痛性腫瘤ヲ右側鎖骨上窩ニモ生ジ，本年3月，乳癌ノ診斷ノモトニ右側乳房切斷及ビ鎖骨上窩腫瘤剔出術ヲ受ク。コノ頃ヨリ兩側視力障碍ヲ來シ，次第ニ惡化ノ度ヲ加ヘ，5月頃ヨリハ時々惡心嘔吐アリ。7月ニ至リ左側頭頂部ニ無痛性腫瘤ヲ生ジ，且ツ左側頸部ニ發作性ノ鈍痛ヲ訴ヘルニ至レリ。コノ頃左側頸部ニ同樣無痛性球狀拇指頭大ノ腫瘤アルニ氣付ケリ。8月ニナリ惡心嘔吐ハ幾分輕度トナリツツアリシガ，視力障碍ハ益々惡化シ，現在殆ンド盲目ニ等シキ狀態トナレリ。左側頭頂部ノ腫瘤ハ次第ニ大サヲ增シ，現在ハ手拳大トナレリ。

現症：所見ノウチ陽性ナルモノヲ上トシテ，注意スベキモノノミヲ記セバ，體格中等度ノ女子ニシテ胸腹部內臟ニハ特記スベキ事ナシ。右側鎖骨上窩及ビ右側胸部ニ上記手術ニヨル瘢痕アリ。左側頸部ニ皮膚及ビ基底ト移動性ノアル彈性硬，無痛性，拇指頭大ノ腫瘤ヲ觸ルル他ニハ何處ニモ淋巴腺腫脹ヲ認メズ。

頭部ハ附圖 (1) 及ビ (2) ニ見ル如ク，大サ尋常ナルモ，左側頭頂部ニ手拳大ノ膨隆アリ。ソ

ノ表面ハ比較的平滑，彈性硬，無痛性，境界鮮明ニシテ．皮膚及ビ基底トハ移動セズ。溫度上昇ナク，靜脈怒張著明。頭部敲打痛ナシ。

神經學的所見ハ兩側嗅覺麻痺，視力ハ右ハ失明シ，左ハ光覺ヲ殘スノミ。眼底ニハ兩側トモ著明ナル鬱血乳頭アリ。瞳孔ハ右側散大，左側ハ大サ正常，對光反應ハ右側殆ンド消失，左側ハホボ正常。輕度ノ斜視アリ，兩側眼球突出著明。左側上眼瞼下垂シ浮腫狀。左側角膜反射消失。左側前庭器過敏狀態ニアリ。其他ニハ腦神經ニ著變ナク，軀幹及ビ四肢ノ運動，知覺及ビ反射異常ヲ認メズ。

頭部レ線像ハ附圖(3)及ビ(4)ニ見ル如ク，腫瘤基底部ニテ頭蓋骨缺損ヲ示シ，ソノ隣接部ハ構造不鮮明ナリ。

診斷：乳癌ノ頭蓋骨轉移。

手術所見(8月27日)。

腫瘤ノ上及ビ周圍ニテハ靜脈怒張著明ニシテ，皮切ニ際シ出血強シ。腫瘤ノ周圍ニテソノ頭頂側ヲ繞ル皮膚瓣ヲツクリ，腫瘤ヨリ剝離翻轉ス。腫瘍ハ帽狀腱膜下ニ擴ガレリ。腫瘤ノ周圍ニテ骨膜ヲ切開シ，之ヲ腫瘍側及ビ健側ニ向ツテ剝離スルニ，腫瘤ニ近ヅク程骨表面ハ粗且ツ脆弱ニシテ出血強ク，且ツ骨膜下ニテ厚サ 0.3 糎ノ平板狀癌性浸潤アリ。腫瘤下ニテハ頭蓋骨缺損アレドモ尙，ソノ中ニ癈殘ノ小骨片諸所ニ散在ス。次ニ腫瘤ノ周圍ニテ頭蓋骨ヲ溝狀ニ除去シ硬腦膜ニ達ス。周圍ノ骨質內ニハ，廣ク癌細胞ノ浸潤アリテ，根本的ニ健康骨部ニ達スルマデ充分骨ヲ除去スルヲ得ズ。骨除去ニヨリテ生ゼシ骨部缺損ハ，腫瘤浸潤ニヨル缺損部ヲ合シテ，手掌ヨリ稍々大ナル程度ナリ。腫瘤ハ硬膜ニ達シ，之ト癒着シ居レドモ，ソノ周邊部ニ於テ簡單ニ鈍性ニ剝離シ得。硬膜ハ表面平滑ナレドモ甚シク肥厚ス。硬膜ヲ腫瘤ノ周圍ニテ切開スルニ，硬膜下ニテ附圖(5)ニ見ル如ク，0.5 糎或ヒハ夫以上ノ厚サヲ有スル板狀癌性浸潤アリ。骨除去範圍ニ於テハ健常ナル硬膜部ナシ。コノ硬膜下腫瘍ハ，腦表面トノ癒着强ク，强イテ剝離セントスレバ甚シク出血ス。ヨツテ腫瘍ノ硬膜下腦表面ヨリノ全剔出ヲ斷念シ，肥厚セル硬膜ノ內外兩板間ノ剝離容易ナルヲ利用シテ，一部ハコノ內外兩板間ニテ，一部ハ硬膜ノ表面ニソヒ，殘部ハ硬膜ノ下面ニソヒテ夫々剝離シテ，硬膜上腫瘍ハソノ大部分ヲ剔出セリ。腫瘍ノ殘存部ハ次ノ3ケ所ナリ。卽チ(1)周圍ノ骨膜下浸潤。(2)周圍ノ骨實質內浸潤。(3)硬膜下浸潤。

腫瘍ハ外表面ニ向ツテハ强ク膨隆セルニ反シ，硬膜下ニテハ附圖(5)ニ見ル如ク，平板的ニシテ膨隆著明ナラズ。

術後經過：後出血ノ血腫ノタメ穿刺ヲ餘儀ナクサレタルモ，尙ホ血腫形成ノ疑ヒアリ，術後第4日目，手術創ノ一部ヲ再開シテ檢スルニ，旣ニ出血ハ停止シ居リタルモ，前回手術ノ際硬膜ヲ切開シタル部分ニ於テ，腦實質ハ脫出シ，アタカモ減壓術ヲ施行セル形ニシテ，依然トシテ腦壓ノ高キ事ヲ示セリ。

手術後，意識明瞭ナレドモ、失語症，右側偏癱，大便及ビ尿ノ失禁アリテ輕快セズ。且ツ不幸手術創感染シ，次第ニ衰弱ノ度ヲ加ヘツツアリシガ，9月16日（術後約3週間）ヨリ脈膊不安定トナリ1分時60乃至110ノ間ヲ動搖シツツ，9月17日突然鬼籍ニ入レリ。

剔出腫瘤ノ病理解剖學的所見：剔出腫瘤ハ附圖(6)及ビ(7)ニ見ル如ク，重サ200瓦，大サハ12糎×9糎×4糎。腱膜面ニハ輕度ノ凹凸性アリ，硬膜面ハ平滑ニシテ硬膜肥厚アル他ニハ著明ナル變化ナシ。腫瘍内ニハ癈殘セル多數ノ骨小片ヲ認ム。腫瘍ノ表面及ビ割面ハ灰白色，組織學的ニハ腺癌ニシテ，大部分骰子形癌細胞ノ集合ナレドモ，一部紡錘形細胞癌像ヲ呈スル所アリ（附圖(8)及ビ(9)）。

死後剖檢頭部所見：腦實質ニ前額面ニ平行ナル數個ノ割面ヲ加ヘテ檢スルニ，腦内ニ轉移竈ノ存在ヲ認メズ。左側内嚢部ニ比較的廣範圍ニワタル腦實質ノ軟化ヲ認ム。更ニ附圖(10)ニ見ル如ク左側大腦半球硬膜下ニテ，殆ンド全半球ニワタル癌細胞浸潤アリ。

癌細胞ト硬膜トノ關係ニ就キテ見ルニ，硬膜ノ上下面トモ極メテ表層的ニ癌細胞塊ノ浸入シ居ルヲ認ムルモ，硬膜内部ヘ向ツテノ浸潤ハナク，硬膜ノ中間層ニハ全ク癌細胞ノ浸潤ヲ認メズ。唯附圖(8)ニ見ル如ク，硬膜中間ノ血管腔内ニ癌細胞集團ヲ認ムルノミナリ。肉眼的ニハ勿論，組織學的ニモ軟腦膜及ビ腦實質内ヘノ癌細胞浸潤ハ認メラレズ。

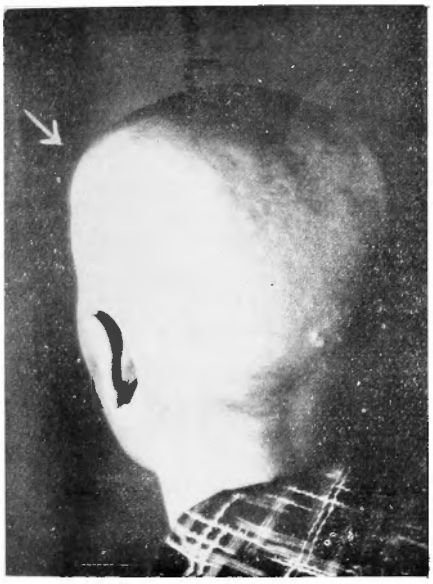
考　察

本例ハ乳癌ノ頭蓋骨轉移ニシテ，癌性增殖ハ一方外表面ニ向ヒテ皮膚ノ膨隆トナリ，他方硬膜ヲ通過シテ硬膜下ニ擴ガリ，腦壓昂進ヒイテハ鬱血乳頭，視力障碍ヲ來セルモノナリ。病理解剖學的ニ，硬膜ニ肉眼的ニモ顯微鏡的ニモ缺損ヲ示サズ，癌ノ連續的浸潤ニヨラズシテ，硬膜内血管ニヨリ轉移的ニ硬膜下ニ擴ガレルモノト思ハルル例ニシテ，斯ノ如キハ甚ダ稀有ナルモノノ如シ。Cushing ガ Meningiom ニテ附圖(11)ニ見ル如キ擴大様式ヲ示シ居ルガ，之ハ浸潤方向ガ内部ヨリ外部ニ向フ場合デアリ，方向ガ逆ナルモ，本例ニ酷似セル様式トシテ興味アルモノナリ。

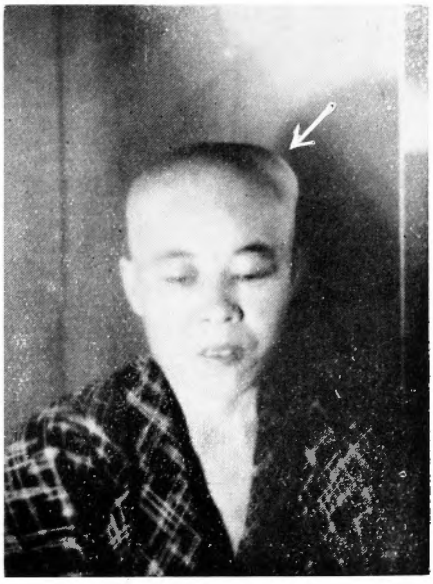
本例ノ如ク末期的狀態ニテハ，手術ノ際，硬膜下浸潤ノ存在ヲ硬膜ノ上ヨリ容易ニ認メ得ル所ナルモ，一般的ニ云ツテ頭蓋骨ニ惡性腫瘍アリテ硬膜ニ達シ，之ト癒着スルニ至レル場合ハ腫瘍ガ硬膜ヨリ比較的容易ニ剝離シ得，且ツ硬膜ガ平滑ニシテ，肉眼的ニ腫瘍ノ浸潤ヲ認メ得ザルガ如キ初期ノ場合ト雖モ，尙ホ本例ノ如キ擴大様式ニヨル硬膜下腫瘍細胞浸潤ノ可能性ヲ豫想シテ，其ノ部ノ硬膜ノ切除ヲ考ヘネバナラヌ。又逆ニ硬膜下ニ惡性腫瘍アル場合ハ，硬膜上，頭蓋骨ヘノ浸潤ヲ豫想スル事ヲ得。

橫山論文附圖

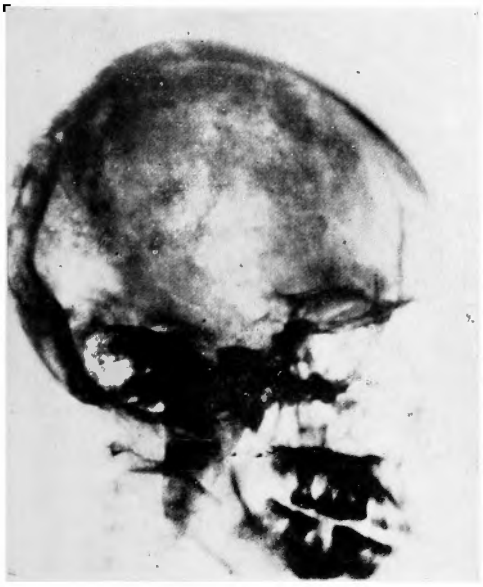
第1圖　頭部腫瘤（術前）



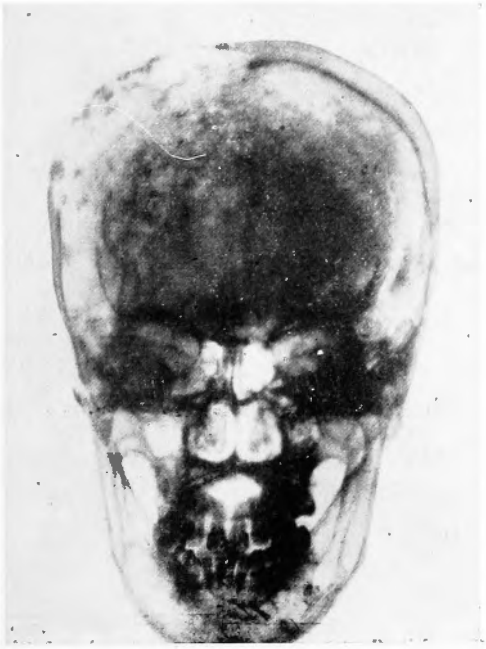
第2圖　頭部腫瘤（術前）



第3圖　頭部レ線像（正側）（術前）

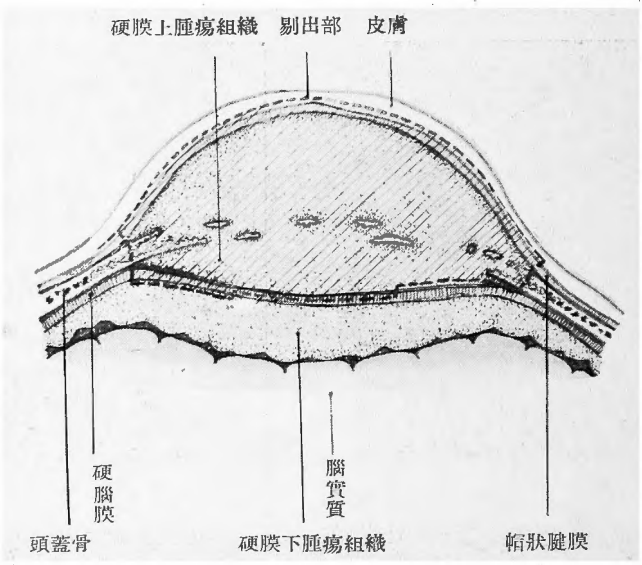


第4圖　頭部レ線像（側面）（術前）



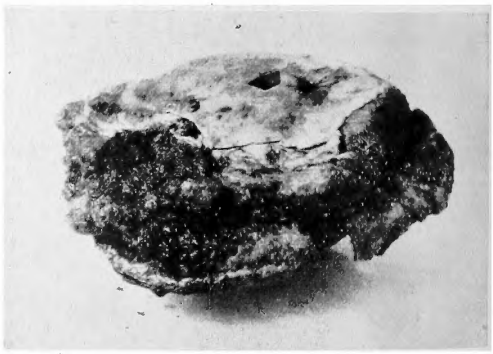
橫山論文附圖

第5圖　手術所見略圖

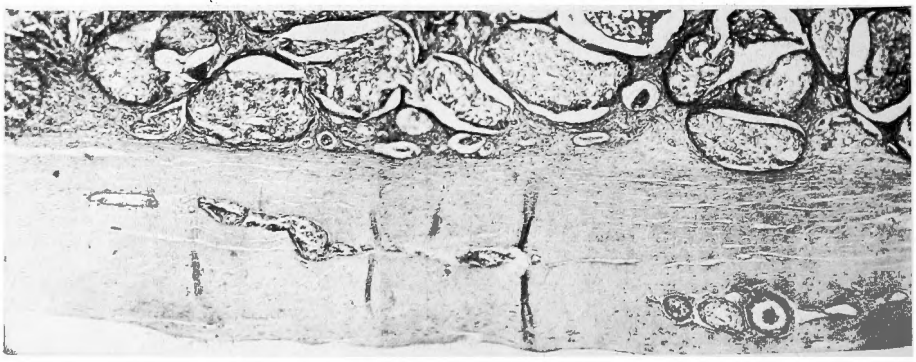


第6圖　剔出腫瘍
表面ハ帽狀腱膜ヲ以テ覆ハル

第7圖　剔出腫瘍
上表面ハ硬腦膜ヲ以テ覆ハル

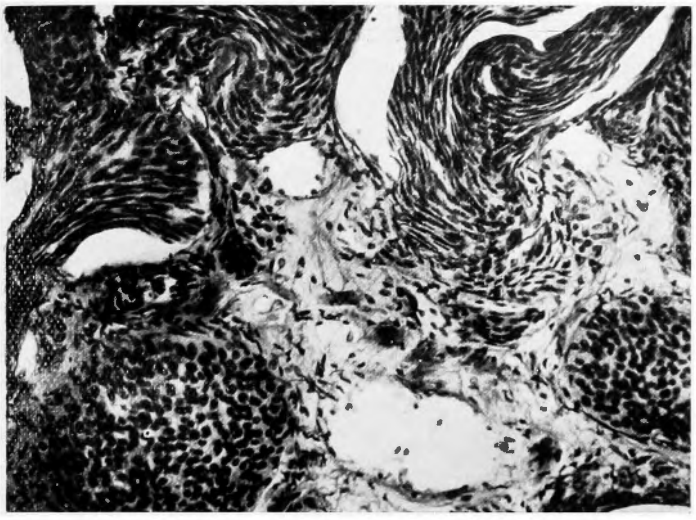


第8圖　剔出腫瘍組織學的所見　上部ハ硬膜上腫瘍組織(弱擴大)

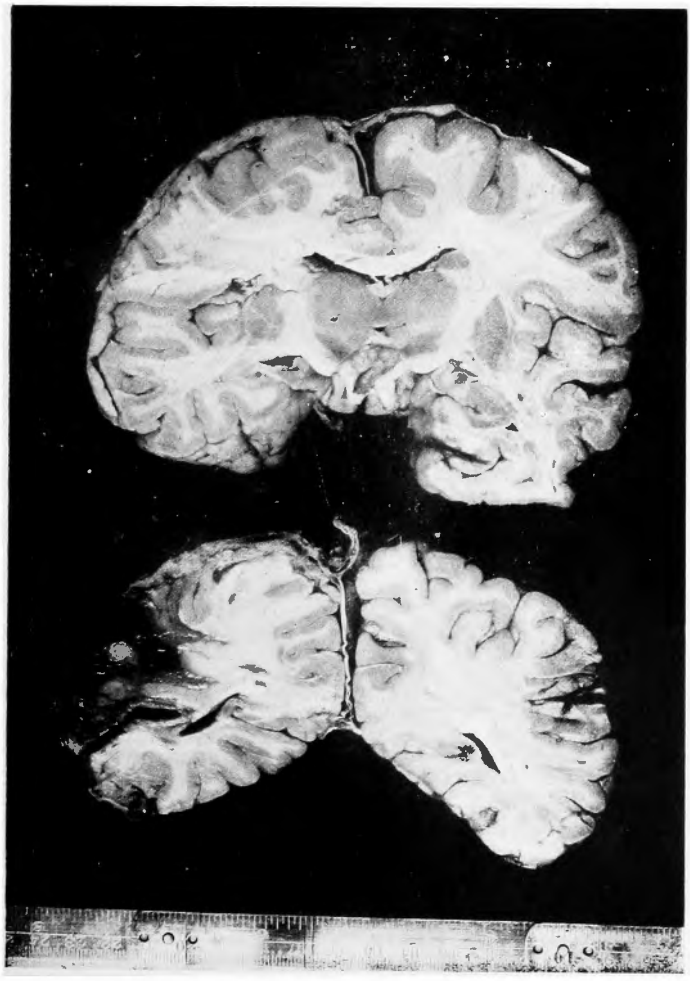


橫山論文附圖

第9圖　剔出腫瘍組織學的所見　紡錘形細胞癌ノ部(强擴大)



第10圖　大腦前頭割面像



横山論文附圖

第 11 圖　Meningiom 擴大樣式（Cushing ニヨル）