"The pathological anatomy of idiocy: resumé": notes by Shuttleworth and Fletcher Beach (1846-1929)

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The Pathological Anatomy of Idiocy.

By

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Resumé

As far back as the time of Hippocrates the physical characteristics of Idiocy were noticed. In the first volume of the English translation he speaks of the Macrocephali, who was in the habit of producing cranial deformation of the head.

Pliny too in his "Historia Naturæ" mentions the Macrocephali, and Tulpius (Observationes Medicæ) has a chapter on Hydrocephalus which he had seen associated with Idiocy.

Lallis in his "Collected Works" in the part dealing with the Anatomy of the Brain (English Edition) describes and figures the brain of a young man, completely imbecile, the size of whose brain was scarcely one-fifth of that of an ordinary man (microcephalus).
Pinel (Traité sur L'Aliénation Mentale) also describes & gives illustrations of two cases of microcephalus, & Gall & Spurzheim in their Atlas accompanying their "Anatomie et Physiologie du Système nerveux en général et du Cerveau en particulier" give plates not only of microcephalic heads & Crania, but of hydrocephalic Crania, in one case of a Cretin, in the other of an imbecile child.
The above remarks have reference to the size of the head.
As regards the form, many deformations are noticed by Meckel in "Mémoires de L'Academie de Berlin" published by him in 1760.
With respect to conformation, Tulpius (Observations

Medical Records) remarks that the convolutions are less numerous, & Malacarne (Encephalotomia nuova universale) states that the lamellæ of the cerebellum increase or diminish according to the development of the intelligence.

As regards the organisation, Meckel (1760) remarks that in idiots there are dryness & hardness of the cerebral substance, & Bonnet & Haller report tumours & ulcerations in the brain & cerebellum.

Finally, Esquirol (Des Maladies Mentales) notices that the convolutions are small, atrophied, compact, & thin, & that the lateral ventricles are of small capacity.

Apparently the first observers dwell most on the size & shape of the head as causes of Idiocy, the structure of the brain being noticed at a later period.

Coming now to recent times, we find that modern authors are of opinion that pathology & classification are mutually interdependent. According to this view we

have classified the anatomo-pathology of idiocy under three chief heads, viz,
I. Congenital formative defects;
II Developmental cases; &
III Acquired cases.
Under the first head we place (1) Microcephalus, (2) Hydrocephalus; (3) Scaphocephalus; (4) "Mongol" imperfections of the osseous, cutaneous, mucous, & in some cases cardiac tissues; (5) Athyreopathic "genetous" cases, in which the convolutions are coarse & simple, or are small slender, & curling (microgyry); (6) Amaurotic "genetous" cases; (7) Sporadic cretinism, due to defective structure or absence of the thyroid gland; & (8) Partial local defects, such as defect of the corpus callosum, or porencephalus.
Cases illustrating some of the foregoing types have been reported by us, & by Marshall, Ireland, Telford-Smith, Spiller, Bosf: Otto, Schroeder van der Kolk, Bruce, D'Astros, Jastrowitz, Hansmanberg, Ulrich, Sachs, Koplik, & Kingdon assisted by Pistein Russell
Under the second head, we include (1) Eclampsia

cases with haemorrhagic or inflammatory lesions; (2) Epileptic cases, the views of Bevan Lewis, Andriezen, Batty, Tuke, & Echeverria being given; (3) Syphilitic & Juvenile General Paralysis cases, the opinions of Clouston, Mott, & our own being quoted; & (4) Paralytic cases, in which there are degenerative changes in the vessels of the brain, or in some cases atrophy of the brain. These cases may be due to birth palsy, to palsy coming on after whooping-cough, or to inflammation.

The opinions of Schroeder van der Kolk, Freud, Telford Smith, & of ourselves are given.

Under the third head, are comprised (1) Traumatic cases, due to pressure on the head during labour owing to abnormal narrowness of the pelvis, prolonged labour or less often the use of the forceps, & lesions produced by accidents; (2) Post-febrile inflammatory cases; under this sub-head is placed Hypertrophic Idiocy, a monograph on this subject has been published by our ref
W. Ireland

45.) and (3) Sclerotic Idiocy, a disease first described by Bourneville in 1882. The changes in the brain observed in this disease were noted by Dr Wilmarth in 25 out of 100 cases, & have been noted frequently by one of us (Beach), who not only describes the changes already observed, but also hyperaemia, softening, tumours & disease of the membranes of the brain; asymmetry of hemispheres & convolutions; alteration in relation of grey to white matter of brain; simplicity of convolutions, thickening of the arteries; thrombosis, disease of the cerebellum & spinal cord; & anomalies of the convex surface & base of the cranium in Tuke's Dictionary of Psychological Medicine, 1892.

The microscopical appearances of idiocy have been observed & noted by one of us & by Bevan, Lewis, Andriezen, Meynert, Hammarberg, & Bourneville.

The Anatomy of a Hydromicrocephalous Brain. by A. Hill MD J. An. & P. 19. 363. 365

Body of Idiot ~~abt 5 ft 8 in~~ Nothing suggestive in ext configur of head - Weight of brain - after soaking for a week in spirit $10\frac{1}{4}$ oz (291.4 gr). Weight when fresh probably not more than 15 oz (425 gr) Circ. of head $18\frac{1}{2}$ Tr 11 A.P. $10\frac{1}{2}$. All parts below cerebral hemisphere small but otherwise normally developed
Cer. hemispheres present remarkable deficiency, ventricles being greatly dilated, & walls formed for most part of membrane. Not more than $\frac{1}{5}$ of cortex was developed. This was confined to the frontal region as far as the front of the ant. transverse convol., the I. of Reil (uncovered) the front part of the temp. sphenoidal lobes, & the orbital region behind tri-radiate fissure. Even in these regions the convol. retained an embryonic arrangt. In the orbital region in front of the triradiate fiss. & in pariet. & occipit. regions, cortex replaced by smooth convex ~~surface~~ membrane, varying fr. .75 mm to 2.5 mm in thickness

Changes evidently Congenital

Corpus callosum totally absent

Ant. Comm. normal

Post. Comm. normal

Fornix small.

Int. Capsule reduced in size —

Conclusions

Corp. striata not subservient to Cortex.

— Clinical history by Dr. de Lisle (Bloor Asylum)

Healthy when born. Illegit: no hereditary taint

At 11 mos. had convuls.ns

Weak in legs. Never walked

Never talked

Blind

Sounds of voices heard to hear & identify. Some smell (smell food)

Deformed pelvis: legs drawn up.

Evacuations passed involuntarily

Will only take food from one whose voice he recognised — Att. will say to him "Now Harry" & he will open his mouth.

Food disappeared without any apparent effort at deglutition

Palate arched & cleft

Att. ~~[illegible]~~ remarked with regard to feeding
It's like pouring water down a speaking tube!
Food. milk beeftea thickened with eggs &c.
Could recognise light, & cried when undressing
Died of diseased knee joint & abscess
vomited & lost his strength.

Congenital Absence of Corp. Callosum fornix &c.
Urquhart. (Case at Idiot Dept. Warwick L.A.)
Head irregular & globular.
Ataxic.
Mental faculties developed to slight degree only.
Head circ 17½.
Other cases by Paget, Lully, Reid, L Downe & Church.

Mayor on Microscopic appearances in atrophy of brain. Jl. Ment. Sc. 79.

Gout

Fe. Ecz.

Gen. Introdn [illegible]

Incoll anat.

Skull Forms of.

1 Rickets. Def ossifn. Sagittal & coronal sutures open after 18th month. fontanelle does not close till after 2nd year. & there are areas of parchment crackling = cranio tabes most marked in parietal regn. Frontal & parietal bosses (Hydrocephalus) (also exist in congenl syph.)

2 - In Hydroceph. h. large & globular. sutures & fontanelles widely open. Face compard small.

3. In Microcephaly head small - vertex tends to be conical - fontanelle closes early

4 Cretinism. head large forehead low fontanelles open - Eyes far apart.

5 Mongolian imbecility head short & spherical - Eyes close to one another

6 Achondroplasia head large & broad forehead promt & bull dog nose.

Vide Article in Cyc. Med
See Fleming - Path. & Phil.

<u>Hypertrophy</u> of Brain first described by Virchow in 1856, when pathological consists of an increase of neuroglia in excess of nerve-cells & nerve-fibres. Deficient clearance of arterial may be a cause, & so it is found in cases like rickets where sutures close slowly. There is a greater amt. of white matter, & consistency of brain is ~~[illegible]~~ firmer than normal Brain itself anaemic.

Symptoms (Gowers) mental impairt. idiocy, fits, headache, mental excitement.

Morbid hypertrophy = Enlargt. of brain with greater or less degree of Sclerosis.

<u>Atrophy</u> = increase of connective tissue at expense of nerve cells. Before birth fr. imp. embryonic developt. At birth fr. haemorrhage. During first few years of life fr. imp. developt.

Partial atrophy

Hemiplegia often accompd. with p.h. chorea (athetoid movts.)

Acute Encephalitis

Chronic " (Bourneville's) Tuberous Sclerosis.

Dr A. Garrod Trans. Cl. Soc. Vol 30 (1897)
p. 6 – (also S. Barts H. Rep. XXX 53 (1894))

6 cases illustrate assocⁿ of Congent. H. D.
with the Mongolian Form of Idiocy.
I. 1897 Cyanosis loud syst. m. – no Ptm
II. 8m. " " " " "
III. 16m. " " mother suffd fr Rheum during pregnancy
IV. 3y. Rickets Mongol. loud syst m. – loudest at pulmonic base
V. 3y. Colman's case very doubtful –

Dr J. Thomson. 3 cases – Congl. h. d. – out of 13 Mongols –

Dr Herringham mentd. 1 case of Mongol with spastic diplegia + heart d.

A number of blank pages follow
and have not been photographed.