THROMBOTIC LESION OF THE VERTEBRO-BASILAR VASCULAR SYSTEM

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The thrombotic lesion of the vessels in the posterior cranial fossa area is considered a rare pathological occurrence (24, 28, 37, 41, 43 etc.) Over a period of 6 years, Dracheva, Z. N. (9) observed three cases with thrombosis of the basilar artery, Golubev, S. A. (7) for 10 years — 9 cases whereas Mitrovski, N. V. (20) for the same period of time — 2 cases. In 1959 Tichy, I. (42) reported the results of necroptic examination of 16 550 cadavers as follows: thrombosis of a. vertebralis — 9 cases, thrombosis of a. basilaris — 8 and embolism of a. basilaris — 4. Kubik, C. S. and Adams, R. D. (cited by 8) state that out of 300 autopsies merely one case with thrombosis of the basilar artery is found, whereas Sicert, R. D. and Millikan (cited by 42) — one per 450 autopsies. The data reported by Ninov, L., Zlatarov, V. and Zekin, K. (22) are similar in general outline. It is rather difficult to detect thrombosis of the vertebro-basilar vascular system in living persons (1, 2, 21, 33 etc.). Budinova-Smela, I. (37) points out that the diagnosis is possible only provided alternating hemiparesis is present.

With the present work we assumed the task to draw attention to the circumstance that the clinical picture of vertebro-basilar insufficiency is characterized not merely by transience and polymorphism, but by gradual development of focal symptomatics as well.

For better illustration we discuss our case material, with follow-up periods up to two years:

Case report I — M. S., male aged 53, with history of illness № 8560/16. 7. 1964.

Past history data: On 28 July, while taking a walk in the yard, he sustained vertigo, blackout and suddenly fell down flat on the ground. Thereafter, he noticed that he was unable to move well his left limbs. Within five days motor weakness of the right leg was developed. Ambulance was rendered impossible, even with assistance.

Somatic state: slightly accentuated second sound of the aorta; blood pressure — 200/130.

Neurological state: Negligible, hardly recognizable central paresis of the leftside facial muscles. The speech is slightly dysarthric. The active movements of the lower limbs and left hand are restricted. The tendon (deep) reflex and the periosteal reflex reveal morbid (abnormal) intensification in all four limbs. Babinski's and Rossolimo's reflexes — bilaterally established. The patient exhibits slight psychomotor excitation.

Paraclinical investigations: Hb 82%, leukocytes 7000, erythrocyte sedimentation rate 80/120, blood sugar 160 mg%, prothrombine index 180, urine — within normal limits, eye bottoms — angiosclerosis retinae. The oscillatory index is higher on the left.

The focal symptomatology gradually deepened and intensified. The patient sustained a deep comatose condition and on 19 July, accompanied by heart and pulmonary insufficiency phenomena he made exitus lethalis.

Clinical diagnosis: Hypertonic disease III stage. General and cerebral atherosclerosis. Softening of the brain stem region. Stasis bronchopneumonia, pulmonary edema, coma.

Pathologo-anatomical diagnosis: Generalized atherosclerosis with main involvement of the vertebral and basilar arteries. Softening, restricted within the paramesian arteries' territory. Stasis bronchopneumonia. Thrombosis of a. pulmonalis. Hemorrhagic infarction of the lungs.

A patient is concerned with insult-type onset of affection. The short-duration loss of consciousness, the slowly developing motor weakness, reaching to tetraparesis within several days, the speech disorders of pseudo-bulbar type and the central paresis of the left facial musculature doubtlessly indicate vascular insufficiency of the vertebro-basilar vascular system with subsequent encephalomalacia in the pons region.

Case report II — R. I., male aged 59, with history of illness № 4611/7. 4. 1965.

Past history: On 3 April, 1965 he sustained repeatedly briefly lasting vertigo. On the following day numbness of the left limbs was added and he was referred for investigation of the eye bottoms. During the examination he collapsed suddenly. Verbal contact with the patient was not established despite attempts. In the condition just now described, he was admitted at the district hospital of Varna. In the course of examinations he regained consciousness and began to talk. After 5—6 minutes he lost consciousness a second time.

Objective finding: scarce, moist rales at both pulmonary bases. The heart — slightly extended boundaries downwards and to the left. Pulse — moderately tense with 70 beats per minute. Fairly accentuated second sound at the aortic apex. Blood pressure — 180/110. Neurological state: Left limbs' muscle force — reduced. Abdominal reflexes — lowered bilaterally. The left pupil is a bit wider than the right. A tiny horizontal nystagmus perceptible on lateral shifting of the eyes. The investigation of the eye bottoms shows angiosclerosis retinae.

During the afternoon the patient felt well. About 8 p. m. he sustained verfigo, nausea and vomiting, completely subsiding within 10—15 minutes. One hour later, he received again nausea, vomiting, coma and finally — exitus lethalis.

Clinical diagnosis: Hypertonic disease, stage III. General and brain atherosclerosis. Transitory impairment of the cerebral circulation. Hemorrhage in the basin of the right medial cerebral artery. Leftside latent hemiparesis.

Pathologo-anatomical diagnosis: Hypertonic disease, stage III. Generalized atherosclerosis. Thrombosis of the left vertebral artery. Stenosing atherosclerosis of the other vertebral artery. Chronic bronchitis. Pulmonary emphysema.

A patient is concerned who sustained several times vertigo, nausea and short-duration loss of consciousness over a period of 14 hours. At 9 p. m. of the same night (7 April, 1965) the general condition acutely deteriorated with coma ensuing and within several minutes — exitus lethalis. The gra-

dual development of the affection, the absence of evidence for intracranial hypertension and the transience of some of the focal manifestations are definitely indicative of an acute disorder of the cerebral circulation. The microfocal stem symptomatics warrants up to a certain extent the assumption of a thrombotic lesion within the vertebro-basilar vascular system. The erroneous interpretation of the stem symptomatics in this patient led to the faulty diagnosis.

Case report III — D. T., male aged 38, with history of illness № 2384/26. 2. 1964.

Past history data: On the evening of 25 February, 1964, he had a drink, taking several glasses of brandy. He went to bed about midnight. Within 15—20 min he complained to his wife of strong headache, nausea and numbness in both right limbs. In the morning, after awaking, he was slightly restless and movements of his right hand and leg were hindered. At 9 p. m. he was admitted as an emergency case in the hospital department.

Objective state: Heart activity — regular. Heart sounds — slightly dull. Blood pressure — 150/100.

Neurolcgical state: Peripheral paresis of the left facial musculature and moderately pronounced rightside spastic hemiparesis. Paresis of the oculomotorius and tetraparesis with all the signs of pyramidal lesion in addition to somnolence were established on the following day.

Paraclinical investigations: erythrocyte sedimentation rate 40/70, leukocytes 10 800, urine — within normal limits, liquor — Pandy (+), cells 16/3.

The condition of the patient steadily deteriorated and he died on 29 February at 9 p. m. with phenomena of heart and pulmonary insufficiency.

Clinical diagnosis: Hypertonic disease stage III. Alcoholic intoxication. Confluent punctiform hemorrhage in the brain stem area. Quadriparesis. Cerebral edema. Hypostatic bronchopneumonia.

Pathologo-anatomical diagnosis: Cerebral atherosclerosis. Thrombosis of the left vertebral and basilar arteries. Chronic bronchopneumonia.

The third case report concerns a patient with onset of the affection during the night — headache, numbness of the right limbs, shortly thereafter followed by motor weakness and disturbed motility of the leftside facial muscles. The focal symptomatics progressively intensifies, gradually creating the syndrome of spastic quadriparesis. In the meantime, rightside oculomotorius paresis appears which is hardly explainable. Retrospectively considered, the affection provides rather sufficient ground for assuming it as thrombosis of the vertebro-basilar vascular system.

Osak and Oshtadl (41) associate the oculomotorius paresis to the thrombotic lesion of a. cerebelli inferior anterior. In accordance with Lidinska and assoc. (40), we also believe that it is hardly possible to detect the lesion of individual vessels, blood supplying the cerebral stem, on the basis of the clinical course only. Presently, the classical Zaharchenko — Wellenberg syndrome is no more considered as a typical pattern (model) in a. cerebelli inferior anterior obliteration (4, 10, 14, 26 etc.). The angiographic and pathomorphological investigations demonstrate that bulbar syndromes appear to have main-stem origin in most of the cases (23, 25, 31 etc.). The clinical picture of infratentorial vascular disorders are characterized by transience of the symptoms and considerable polymorphism — vertigo crises, syncopal

states, nystagmus, Meniere-like paroxysms, alternating syndromes and the like (11, 13, 15, 20, 27, 29, 30, 32, 38 etc.).

The cases herein described show that indeed, thrombosis of the vertebro-basilar vascular system is rarer. Its syndromology is by no means monotypical. In the second case report, the affection runs a course characterized by seizures (attacks), whereas in the remainder, the most important element in the clinical picture is the gradual development of focal symptomatics.

The correct diagnosis in vertebro-basilar insufficiency depends not merely on the angiographic and electroencephalographic investigations, as suggested by a number of writers (3, 5, 6, 34, 36, 39 and others) but also, on the adequate interpretation of focal stem symptomatics.

REFERENCES

1. Аносов, Н. Н. и Б. С. Велинский. Ишемический инсульт, МЕДГИЗ, Л., 1963, 112.
2. Богородинский, Д. К. Проблемы невропатологии, М., 1963, 28.
3. Брагина, Л. К. *Ж. невропатол и псих.*, 1960, 12, 1594.
4. Боголепов, Н. Б. В кн. Многотомное руководство по неврологии, 1963, 4, 307.
5. Верещагин, Н. В. *Ж. невропатол. и псих.*, 1961, 9, 1, 304.
6. Верещагин, Н. В. *Ж. невропатол. и псих.*, 1962, 11, 1, 654.
7. Голубев, С. А. *Руска кл.*, 1925, 4, 709 (цит. по 5).
8. Дерман, Е. С. и М. Д. Мац. *Ж. невропатол. и псих.*, 1960, 12, 1616.
9. Драчева, З. Н. *Ж. невропатол. и псих.*, 1962, 11, 1660.
10. Иргер, И. М. В кн. Сосудистые и инфекциозные заболевания нервной системы и диенцефальные формы патологии, М., 1959, 106.
11. Койнов, Р., П. Овчарова и Х. Хараланов. *Iеврология, псих. и невро-хирургия*, 1964, 5, 314.
12. Калиновская, И. Я. и М. И. Кончакова. *Ж. невропатол. и псих.*, 1966, 4, 529.
13. Каневская, Ж. С. и И. А. Беличенко. *Ж. невропатол. и псих.*, 1966, 4, 23.
14. Левин, Г. З. и Г. Ф. Перевощинова. В кн. Клиника и терапия инсульта, 1963, 65.
15. Литвак, Л. Б. *Ж. невропатол. и псих.*, 1962, 11, 1607.
16. Лурье, З. Л. Расстройство мозгового кровообращения, Медгиз, М., 1959.
17. Лурье, З. Л. и Л. К. Брагина. *Ж. невропатол. и псих.*, 1962, 11, 1612.
18. Лужецкая, Т. А. *Ж. невропатол. и псих.*, 1962, 11, 1665.
19. Лужецкая, Т. А. В кн. Проблемы невропатологии, М., 1963, 40.
20. Миртовски, Н. А. Нарушения мозгового кровообращения, М., 1958.
21. Настев, Г. Мозъчен инсулт., Мед. и физкултура, 1960.
22. Нинов, Л., В. Златаров и К. Зекин. *Неврология, псих. и неврохирургия*, 1964, 4, 285.
23. Петров. Ат. и К. Цветанов. *Неврология, псих. и неврохирургия*, 1964, 1, 16.
24. Растворова, А. А. *Ж. невропатол. и псих.*, 1958, 9, 1050.
25. Стефанов, С. Тезиси на Петата национална конференция върху съдовите заболявания на централната нервна система, София, 1963, 18.
26. Стефанов, С. *Ж. невропатол. и псих.*, 1965, 10, 1602.
27. Саражишвили, П. М. и М. И. Мац-Шевилидзе. Клинические синдромы окклюзырующих поражений сосудов головного мозга. Тбилиси, 1963.
28. Стефанова, Н. С. *Вопросы псих. и неврологии*, Л., 1962, 4, 502.
29. Шефер, Д. Г., З. С. Манилис и Н. Н. Чупрянов. *Ж. невропатол. и псих.*, 1962, 11, 1647.
30. Шмид, Е. В., Н. В. Верещагин, А. Н. Колтовар и Л. К. Брагина. *Ж. невропатол. и псих.*, 1962, 8, 1149.

31. Шмид, Е. В. В кн. Актуални проблеми в неврологията и психиатрията, София, 1964, 53.
32. Шмид, Е. В. и Д. Джибладзе. *Ж. невропатол. и псих.*. 1959, 8, 897.
33. Шмид, Е. В. *Ж. невропатол. и псих.*, 1962, 11, 1601.
34. Bajer, A. *Čs. neurol.*, 1959, 4, 281.
35. Bajer, A. *Čs. neurol.*, 1959, 4—5, 251.
36. Bajer, A. *Čs. neurol.*, 1960, 7, 476.
37. Budinova-Smela. *J. neurol. psychiat. Čs.*, 1955, 4, 275.
38. Henner, L. Specialni neurologie, Praha, 1961, 121.
39. Chrost, B. *Acta Orthop. traumat. Čechosl.*, 31/2, 172, 1964.
40. Lidinska, N., Q. Lidinsky и Z. Salemanova. Prakticky lekar, 1964, 13—14, 501.
41. Osak, J., A. Ostadl. *Čs. neurologie*, 1959, 6, 394.
42. Tichy, J. *Čs. neurol.*, 1959, 2, 133.
43. Vojir, R., J. Viklicky. *Neurol. psychiat. Čs.*, 1955, 2, 145.

ТРОМБОТИЧЕСКОЕ ПОРАЖЕНИЕ В БАССЕЙНЕ ВЕРТЕБРО-БАЗИЛЯРНОЙ СИСТЕМЫ

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РЕЗЮМЕ

Авторы описывают три собственных наблюдения с тромбозом в бассейне вертебро-базилярной системы. Синдромология заболевания является многообразной и нетипичной. В виде самого важного элемента в клинической картине, указывается на постепенное развитие очаговой симптоматики. Правильная диагностика вертебро-базилярной недостаточности по мнению автора, зависит не только от ангиографических и электроэнцефалографечских исследований, но и от хорошой интерпретации очаговой стволовой симптоматики.