

CLINICOPATHOLOGICAL CASE

Chronic meningitis secondary to Wegener's granulomatosis in the central nervous system in a 14-year-old patient

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Summary of the clinical history (A-11-44)

We present the case of a teenage male transferred to a second-level hospital with headache and impaired alertness.

Hereditary family history

The patient is from a family with an apparently healthy father living outside the nuclear family. The patient lives with his mother and three brothers of 22, 18 and 16 years of age. Maternal and paternal family antecedents report diabetes mellitus and hypertension.

Non-pathological background

The patient is a native and resident of the State of Mexico and lives in a home with all services provided. He has normal psychomotor development and a complete immunization schedule.

Perinatal and pathological history

The patient is a product of fourth gestation, normal pregnancy with prenatal care at a local health center and vagi-

nal birth with a birthweight of 3330 g without knowledge of birth length. The patient had chickenpox at 3 years. He ingested caustic material in an attempted suicide in October 2009 resulting in a severe esophageal injury. He was admitted to the hospital and a gastrostomy was performed. Transfusion was carried out on that occasion. Fourteen days prior to admission due to the current condition, he presented watery rhinorrhea without cough or fever that resolved without treatment.

Present illness

The present illness began 1 day before admission to Hospital Infantil de México Federico Gómez (HIMFG). He was taken to another hospital with Glasgow of 14, dysarthria and productive cough. Lumbar puncture was performed due to probable neuroinfection. Clear cerebrospinal fluid (CSF) was obtained, protein 30 mg/dl, glucose 70 mg/dl, erythrocytes 20 mm³, and no bacteria were seen. CBC reported leukocytes 9000 mm³, 67% neutrophils, 20% lymphocytes, and hemoglobin 14.6 g/dl. The patient was transferred to HIMFG to rule out brain abscess.

On admission a history was obtained of 10 days evolution with sudden onset of sharp headaches encompassing the entire head. There was also progressive drowsiness of 4 days evolution with alteration of the sleep cycle with up to 15 h of sleep and then bradylalia and bradypsychia. On physical examination weight was 44 kg, height 1.66 m, heart rate (HR) 64/min, respiratory rate (rR) 14/min, blood pressure (BP) 100/54 mmHg, and temperature 37°C.

The 14-year-old male patient appeared his chronological age with bradylalia and bradypsychia, without cranial nerve alteration, normal muscular tone and decreased tropism. Isochoric pupils were demonstrated with normal

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Received for publication: 4-8-13

Accepted for publication: 5-8-13

reflexes. Neck was normal. Pulmonary fields were clear and well ventilated and heart sounds were normal. Abdomen was solid, depressible, nonpainful and with normally functioning gastrostomy. Capillary refill was 2 sec in the extremities. Glasgow was 15/15 with strength in the left upper and lower extremity 4/5, tendon reflex (ROT) left upper and lower extremity +++/++++, left Babinski, ataxic gait, sensitivity preserved, no dysmetria or disidiadochokinesis, Kernig and Brudzinski present.

CASE PRESENTATION

Department of Comprehensive Patient Care (Dr. Rómulo Erick Rosales Uribe)

The case being analyzed is that of a 14-year-old patient with a history of attempted suicide by ingestion of caustic material. Colon transposition was performed. Two years later he presented due to chronic evolution in the central

nervous system that warranted a multidisciplinary study due to data of severe central nervous system disease. The first possible etiology in our environment was tuberculous meningitis, which was ruled out during autopsy. Diagnosis of Wegener's granulomatosis was established without a renal or respiratory component, which is a very rare event.

Imaging (Dr. Marco Antonio Sarmiento)

Chest X-ray was initially normal on admission. He progressed to a pleural effusion which occupied the entire left hemithorax, later becoming bilateral. Initial cranial tomography demonstrated asymmetry in bridge and hypodensity at the mesencephalon with a normal ventricular system. With administration of contrast, a hyperdense image with meningeal enhancement was observed with an adequate ratio of white and gray matter. The circle of Willis was reported to be normal (Figure 1). Fourteen days

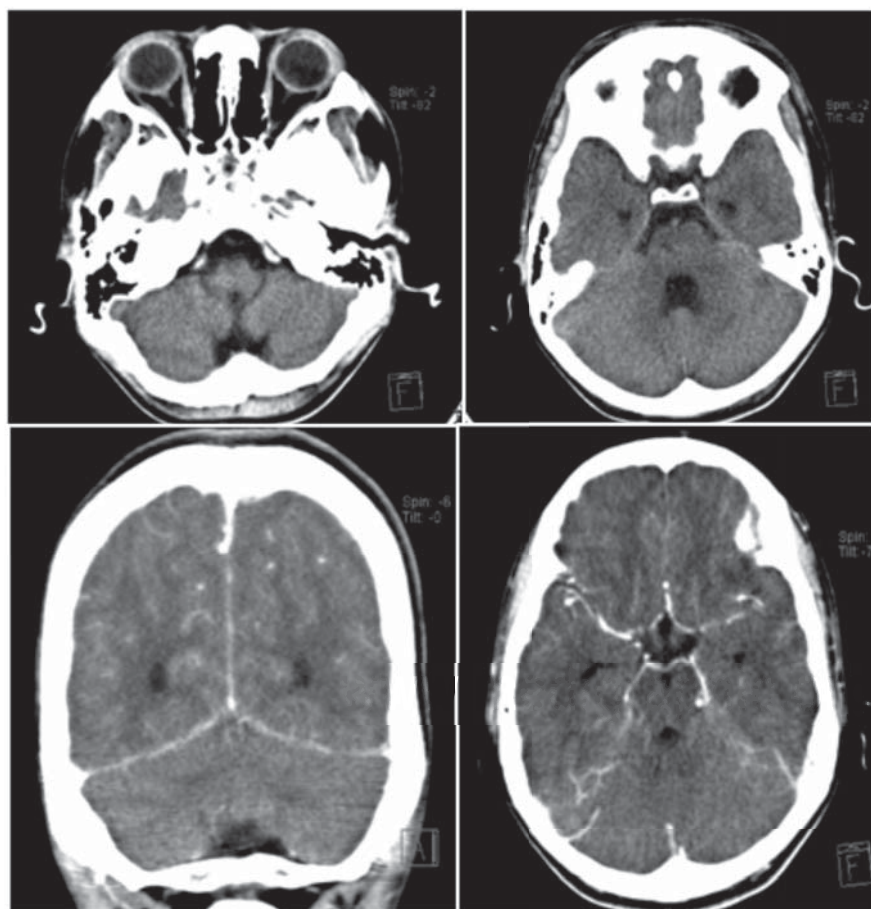


Figure 1.

Initial brain tomography.

later a new CAT scan was performed, revealing an irregular circle of Willis, greater meningeal enhancement and hydrocephaly (Figure 2). One month after his admission, loss of gray and white matter ratio was observed with effacement of the frontal and parietal convolutions and meningeal enhancement as well as multiple hypodense areas with decrease in cerebral perfusion.

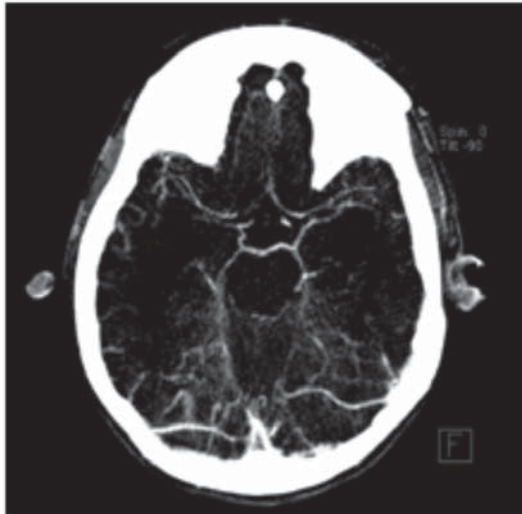


Figure 2. Axial tomography 15 days after patient admission. Irregular circle of Willis is observed, major meningeal reinforcement and hydrocephalus.



Figure 3. Postsurgical changes characterized by placement of valve derived from the right lateral ventricle.

During brain magnetic resonance with FLAIR phase, a right asymmetrical hypointense image and supratentorial widening of the ventricular system was observed in the bridge. In other phases, an asymmetric hyperintense image was shown in the bridge.

The subarachnoid space towards the convexity showed normal characteristics. There was adequate configuration of the supra- and infratentorial ventricular system. There was adequate relationship of the gray and white matter. In the brain stem a hypodense amorphous image was shown located in the right cerebral peduncle. The cerebellum was noted to be normal in appearance. After injection of contrast media there were no areas of abnormal enhancement seen. There was proper configuration of the circle of Willis.

Dilation of the supra- and infratentorial ventricular system is already evident on a prior study. With the injection of contrast media the adequate conformation of the polygon was appreciated, with a beaded appearance in the mid- and anterior cerebral arteries. There were no disorders observed in the cerebral parenchyma (Figure 2).

Postsurgical changes were observed characterized by shunt placement in the right lateral ventricle, without changes in the amplitude of the ventricular system (Figure 3).

There was increased pulmonary vasculature seen on chest X-ray. A ground-glass pattern was observed in the left

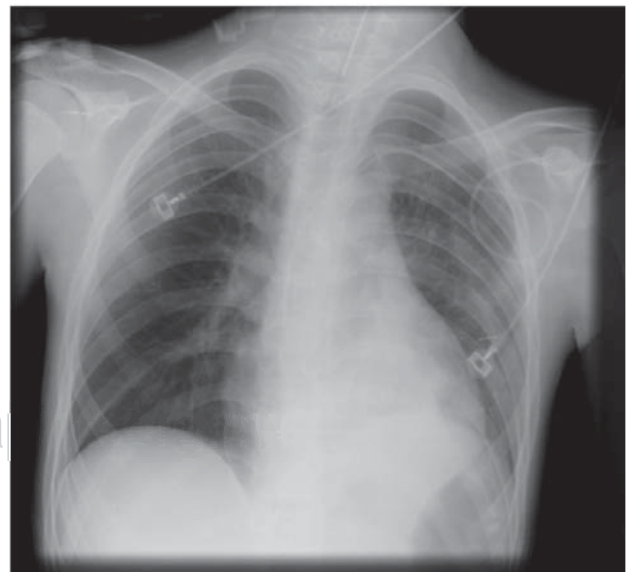


Figure 4. Chest X-ray demonstrates increased pulmonary vascularity.

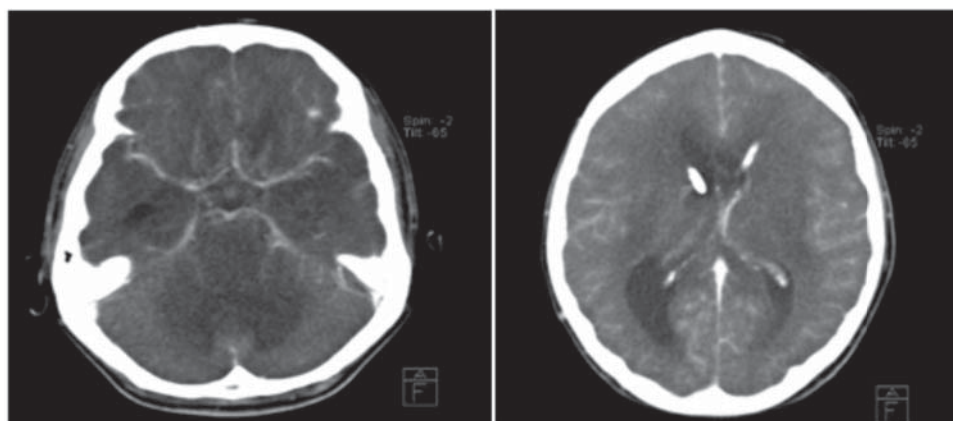


Figure 5.

Profound loss of ratio of gray/white matter with areas of vascular hypoperfusion.

hemithorax. There was loss of the left diaphragmatic costal angle with effusion. The cardiac silhouette was normal. An endotracheal tube was observed in the trachea in good position (Figure 4). There were postsurgical changes due to placement of surgical shunts in both lateral ventricles with adequate functioning. There was loss of gray matter to deep white with areas of vascular hypoperfusion (Figure 5).

Imaging diagnoses:

- Colonic transposition
- Encephalomalacia in the brain stem
- Diffuse basal alveolar infiltrates
- Pleural effusion
- Hydrocephalus
- Data suggestive of vasculitis in the circle of Willis

Neurology (Dr. Rubén Espinoza Montero)

Any data of basal arachnoiditis?

Imaging (Dr. Marco Antonio Sarmiento)

Only the tentorium and the presence of hydrocephaly were observed.

Ambulatory Pediatrics Branch (Dr. Edgar Bustos)

In the brainstem, are the areas seen from a pontine myelinolysis?

Imaging (Dr. Marco Antonio Sarmiento)

No. In cases of pontine myelinolysis, hyperdense diffuse brain stem images and restriction patterns in diffusion sequence are seen.

Coordinator (Dr. Rómulo Erick Rosales)

In clinical practice, intraoperative biopsy result is obtained at the time. To continue with the clinical exercise and to be of assistance to the participants, I ask Dra. Argelia Escobar Sánchez to report on the biopsy before providing the autopsy report.

Pathology (Dra. Argelia Escobar Sánchez)

We received an intraoperative biopsy of the brain. Cuts were made in the frozen tissue in which the matter and cerebral cortex are found to have extensive necrosis and granulomas. Subsequently, in the fixed tissue there were multiple stains performed looking for alcohol resistant acid-fast bacilli (AFB), which were not found. Only granulomatous meningoencephalitis was reported, but the report suggests performing polymerase chain reaction (PCR) for tuberculosis.

DISCUSSION

Department of Teaching

(Dr. Aarón Pacheco Ríos)

The patient was a 14-year-old male from a low socioeconomic environment. Of note is the history of attempted suicide by ingestion of caustic material, given that suicide is an important case of death in adolescence (second place). It is believed that there was lack of in-depth analysis of the reasons that surrounded this intent because it was urgent to identify and control a new intent. Subsequently, the patient required colonic transposition and esophageal dilatations, which raised the suspicion that a brain abscess may be the cause of his pathology, but this possibility was ruled out.

The following syndromes were integrated according to the clinical data:

1. Superior motor neuron syndrome. Characterized by hemiparesis, hyperreflexia and left Babinski sign, which indicate an involvement of the right pyramidal route below the decussation of the pyramids. Brady-lalia and bradypsychia are notable, taking into consideration the imaging findings as well as how the corticospinal and corticobulbar routes give modern man the principal characteristics of dexterity and language ability. It is proposed that these routes were affected at the level of the hypodense lesion, which is seen on imaging studies. This explains the inability to articulate words, plus the bradylalia or bradypsychia.
2. Meningeal syndrome. On admission the patient presented with meningeal irritation with Kernig and Brudzinsky signs, plus alterations in CSF, which were classified as abnormal due to the presence of hypoglycorrhachia, hyperproteinorhachia, and pleocytosis with a polymorphonuclear predominance in 80%.
3. Chronic meningitis. The patient presented with a clinical picture 4 weeks from symptom initiation and the causes are divided into infectious and non-infectious. Noninfectious causes such as granulomatous aneitis and Behcet disease do not appear to be pertinent based on the absence of clinical symptoms and are also uncommon at 14 years of age.
4. Meningeal tuberculosis. The principal infectious cause of chronic meningitis is meningeal tuberculosis, which can be supported based on the radiological findings of vasculitis, beading of the circle of Willis plus hydrocephaly, which reflects blocking of the CSF circulation. Meningeal tuberculosis in the adolescent is not systemic but is rather due to discharge of old foci of tuberculosis in the subarachnoid space. In the first 10 days PMNs may be found and the change in the first days in our patient with an increase in CSF protein and decrease in glucose, as well as a mononuclear predominance, support the diagnosis despite having CSF stains negative for AFB (only positive 10 to 20% of the times despite a true meningeal tuberculosis).
5. Syndrome of inappropriate antidiuretic hormone secretion (SIADH). The presence of euvoletic hyponatremia with serum sodium plus hypotonicity and with low serum osmolar values of 240 mOsm with

an elevated urine osmolarity support this diagnosis. However, there were studies lacking to rule out other possibilities such as cerebral salt wasting syndrome.

6. Herniation of cerebellar tonsils. On the face of an inadequate evolution with rostrocaudal deterioration plus the CAT findings of a poor differentiation of gray and white matter, ventricular collapse and erased perimesencephalic cisternae lead us to consider severe cerebral edema with a probable herniation of the cerebellar tonsils that led to the patient's death.
7. The possibility of pontine myelinolysis is ruled out. This is usually present some days after correction of a chronic hyponatremia. The patient presented with irritability that progressed to aggressiveness, which could be early data of myelinolysis. Classic symptoms such as spastic quadriplegia and pseudobulbar paralysis reflect the damage in the corticospinal and corticobulbar tracts.

It is necessary to evaluate the acute systemic hyponatremia. In the case of an acute event with symptoms there are no deleterious effects when it is corrected, but in the case of chronic hyponatremia, aggressive management with replacement may be inappropriate and may even cause death. Chest X-rays with pleural effusion indicate poor electrolyte management because the data of pleural effusion rapidly disappear and do not appear to correspond with a nosocomial infection.

The final diagnoses are listed as follows:

- Adolescent male with prior history of attempted suicide
- Colon transposition
- Chronic meningitis probably due to tuberculosis
- Syndrome of inappropriate antidiuretic hormone secretion

Cause of death was embedding of tonsils vs. pontine myelinolysis or mesencephaly.

Intensive therapy (Dr. Adrián Chávez)

It is difficult with only clinic support to diagnose SIADH or cerebral salt wasting syndrome. For some nephrologists there are no differences in the syndromes and the two are one and the same at different times.

It is necessary to point out that the patient with an acute cerebral lesion of any etiology plus hyponatremia upon ar-

rival in the emergency room has a 60% greater chance of death than a patient without hyponatremia not due to the hyponatremia, but due to the severity of the lesion. Hyponatremia is an additional symptom of the seriousness of the condition. In the case of a child, urgent correction of the hyponatremia is required because it may be fatal.

SIADH is a hypervolemic hyponatremic state in which salt is lost, elevating natriuresis. Salt wasting is a hypovolemic hypotonic or normotonic state but whose difference is established with a clearly negative sodium balance, losing more sodium than what is given. To establish the difference between these scenarios, clinical characteristics are insufficient. It is necessary to determine the fraction of excreted urea, sodium balance at 24 h, measurement of the amount of sodium received and lost to arrive at a sodium excretion rate. Initial management of the hyponatremia with an acute brain injury always requires sodium correction regardless of the cause.

Nephrology (Dr. Ricardo Muñoz Arizpe)

I believe that the electrolyte management was deficient because the patient was admitted with metabolic acidosis due to retention of hydrogen ions. This was not corroborated because no blood gases were done although urinary pH was 5 with elevated ketones of 150 mg/dl, indicating a nondiabetic ketoacidosis due to prolonged fasting of 1 to 2 weeks. Also, treatment was given for hypocalcemia, which was not proven because serum albumin was not measured. It is suggested that all physicians measure serum albumin in order to adequately interpret calcium levels.

Hyponatremia probably had an evolution of 1 to 2 weeks and in the presence of urine osmolarity of 770 and 240 mOsm it was concluded that the patient was not dehydrated, which makes an unmistakable diagnosis of SIADH secretion. There is additional information such as urea of 10 mg, which is abnormal for a 14-year-old child and is explained because it was diluted. This marks the difference between SIADH and salt wasting syndrome. Also, when reviewing the glomerular filtration rate of 182 ml/min/1.73, it can be seen that it was double than what is normal for the patient's age. This indicates that he was ultrafiltrated due to excessive extracellular fluid, which occurs only with SIADH. Sodium is not indicated in the management of this type of syndrome. The actual problem is salt and water retention. Sodium should only be given in cases of convulsive crisis, using hypertonic sodium at 3%

to increase the hypotonicity and then sodium restriction. This patient had temporary remissions of the SIADH to be exacerbated by a severe hyponatremia, which was attempted to be corrected with administration of additional sodium, leading to increased urinary secretion of sodium and further hyponatremia, and most certainly the cerebral hemorrhage.

Pathology (Dra. María Argelia Escobar Sánchez)

Before reviewing the histopathological findings, I will demonstrate the intraoperative biopsy (Figure 6). Various fragments of tissue that together measured 4 x 4 x 0.5 cm were received fresh for intraoperative study. We identified some tissues that were clearer, some necrotic and others with areas of congestion. Fragments of cerebral cortex and white matter were observed on the definitive cuts stained with H&E. The subarachnoid space was observed with numerous blood vessels, mainly small caliber arterioles with wall necrosis and extensive inflammatory infiltrates comprised of lymphocytes and epithelial histiocytes (Figure 7). There were also some areas of necrosis. These same characteristics observed on the subarachnoid vessels were also present in the parenchymatous vessels. A median caliber artery was seen, and the inflammatory infiltrate localized in its entire wall was able to be visualized. Also observed was detachment of the epithelium and, in zones near this artery, necrosis and zones of infarction (Figure 8).

There were also zones of necrosis and infarction adjacent to the blood vessels. Once again, the vascular lesion that was observed is very evident with presence of fibroid necrosis in the lumen. Multiple stains were carried



Figure 6. Intraoperative brain study.

out in the search for microorganisms, specifically yeasts, which were negative. A Ziehl-Neelsen stain was carried out searching for AFB (Figure 9). Diagnosis of granulomatous meningoencephalitis was made.

Subsequent to this, the patient died. The exterior habitus demonstrated a deficit of 8 kg because he had a history of caustic sodium bicarbonate ingestion with colonic transposition and permanent gastrostomy, a tracheostomy and an old scar of 26 cm. There was also hypotrophy of the extremities. Recent sutured surgical wounds were observed where the ventriculostomy and biopsy were performed.

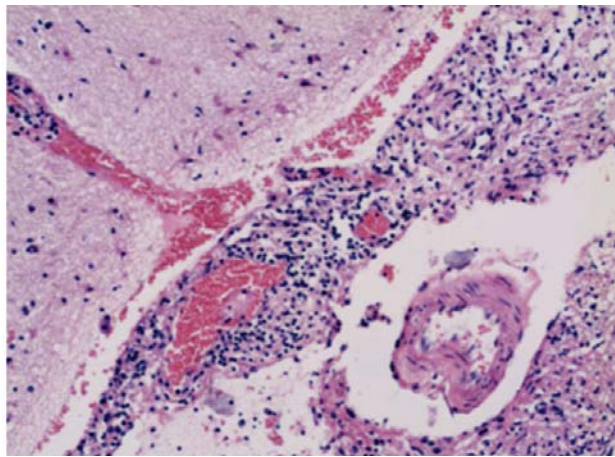


Figure 7. Cerebral cortex and subarachnoid vessels with inflammatory infiltrate of epithelioid lymphocytes and histiocytes (H/E 20x).

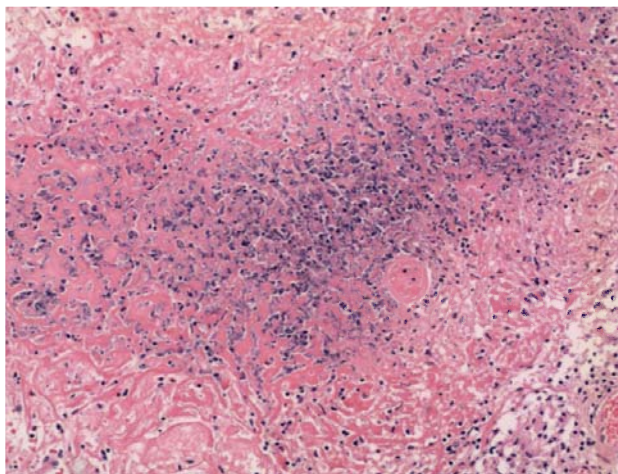


Figure 8. Cerebral infarct (H/E 20x).

The brain weighed 1500 g vs. an expected weight of 1450 g. The aspect of the meninges is notable, seen by the convexity. These are observed to be opaque, unpolished and the ventriculostomy opening is observed. At the base, the meninges showed edema, i.e., the entire infratentorial portion is affected. The patient had a macroscopically evident fibrinopurulent meningitis (Figure 10). Axial cuts were done where it was evidenced that the patient had very extensive cerebral damage predominantly in the right hemisphere, affecting the frontal, temporal and basal ganglia. There were extensive areas of infarction and necrosis that affected the entire mesencephalon, bridge and part of the cerebral hemispheres (Figure 11).

The histological lesion was characterized by a necrotizing granulomatous vasculitis that affected the arterioles and small and medium-sized arteries. It was comprised of granulomas with numerous lymphocytes and epithelioid lymphocytes that affected the entire wall of the blood vessels. Also, there was loss due to necrosis. This infiltrate extended to the perivascular areas. In the near zones there are extensive areas of hemorrhage, necrosis, and hemorrhagic and ischemic infarcts (Figure 12). The vasculitis this patient presented was evident in the most affected vessels. A long-standing vasculitis was observed with lesions in various stages of evolution. One can see plexiform lesions, again the infiltrate and the necrosis. At higher magnification, the presence of necrosis and numerous epithelioid histiocytes make up the granulomas. This is a histological lesion highly representative of a granu-

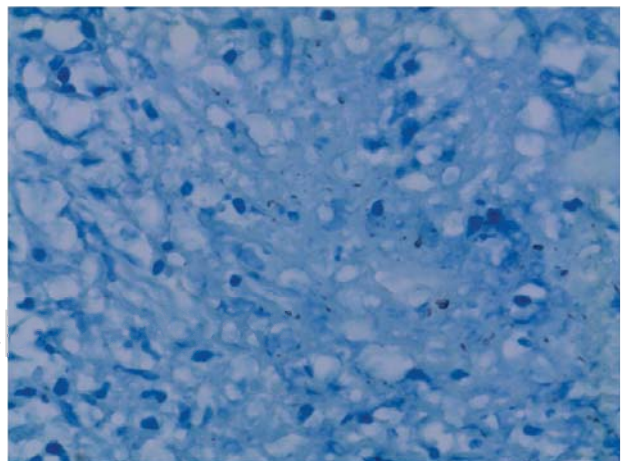


Figure 9. Ziehl-Neelsen stain, negative for acid-fast bacillus (ZN 40x).

lomatous necrotizing vasculitis where we can see loss of internal and external elasticity due to fibrinoid necrosis as well as inflammatory infiltrate. In a PAS stain that stains basal membranes, the presence of plexiform lesions and fibrinoid necrosis can be seen. There were other arteries and arterioles that were much more affected (Figure 13). Stains were done to look for microorganisms, especially fungi and microbacteria. There are five causes of granulomas: microbacteria, fungi, rheumatic diseases, foreign body reactions and sarcoidosis. From this group, the only ones that can cause granulomas with vasculitis are rheu-

matological causes. These are large-caliber arteries and arterioles that we can see are not affected. The inflammatory infiltrate is perivascular and the wall is complete.

Now we discuss the pulmonary findings. Lungs had an increased weight of 750 g vs. an expected weight of 715 g. Macroscopically there were areas of congestion and dilatation of the bronchial branch. Histologically the same lesion is observed as in the central nervous system, represented by vasculitis with granulomas with an inflammatory process comprised of lymphocytes and epitheloid histiocytes (Figure 14). Granulomas are evident and wall



Figure 10. Macroscopic photograph of the base of the brain. Meninges are purulent and swollen.

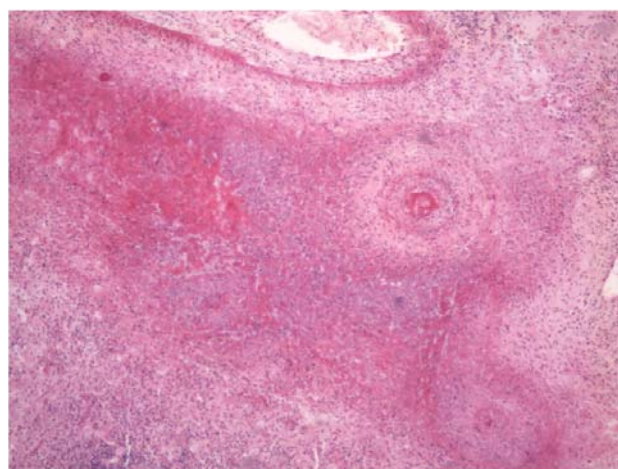


Figure 12. Extensive areas of hemorrhagic infarcts and ischemia adjacent to the affected vessels (H/E 10x).

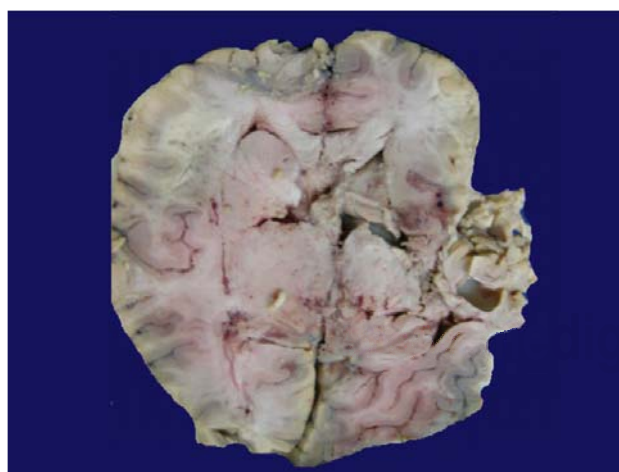


Figure 11. Axial cuts with extensive damage in the cerebral hemispheres.

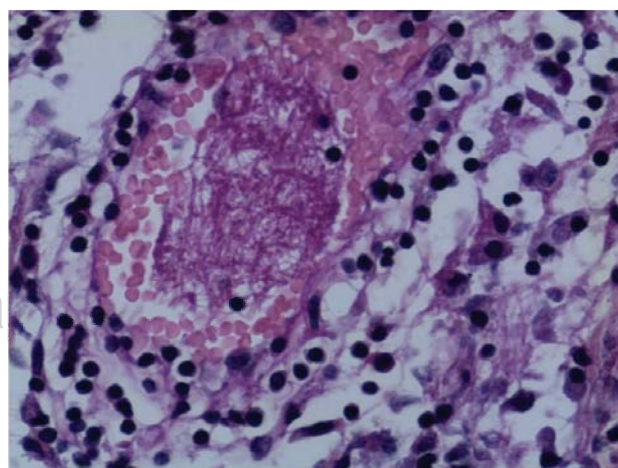


Figure 13. Fibrinoid necrosis in the artery wall (H/E 40x).

necrosis is seen. These are lesions that occlude the lumen and damage the wall of the vessels. There is presence of multinucleated giant cells with necrosis and fibrosis. There were no granulomas suggestive of tuberculosis. Masson stain shows extensive fibrosis indicating chronic damage with interstitial fibrosis and again the plexiform lesions in all the arteries and arterioles in the right lung as well as in the left lung. In other areas there is also extensive inflammatory infiltrate constituted by polymorphonuclear leukocytes within the lumen of the alveoli, in the interalveolar septa and around the bronchioles. This patient has

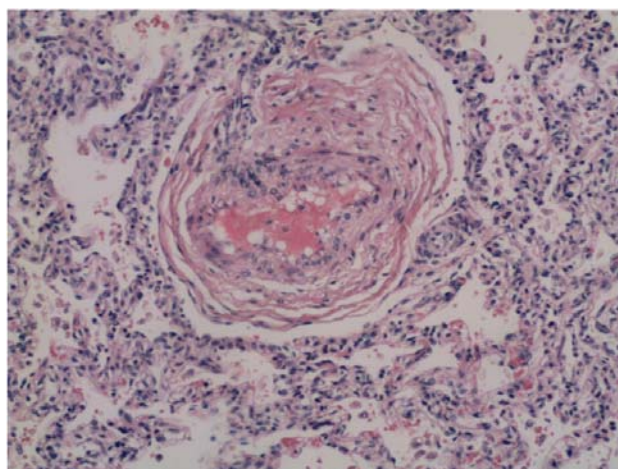


Figure 14. Vascular pulmonary lesion as in the central nervous system (H/E 20x).

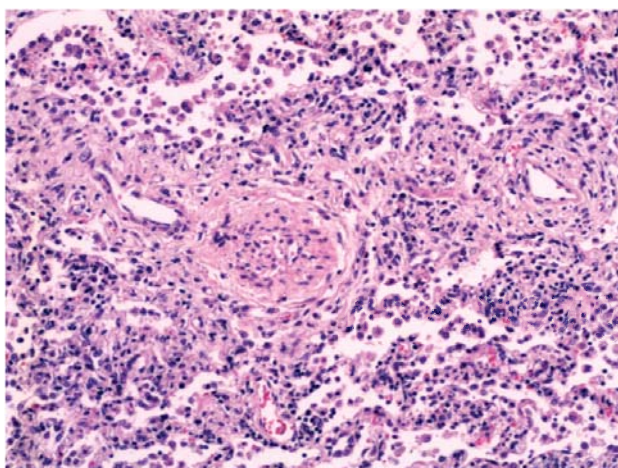


Figure 15. Foci of bronchopneumonía (H/E 20x).

a bronchopneumonia with extensive areas of hemorrhage, inflammatory infiltrate as well as necrosis, cellular debris and incipient formation of hyaline membranes (Figure 15). In addition to bronchopneumonia there is deposition of connective tissue around the bronchioles, i.e., the patient had bronchiolitis obliterans.

Final diagnoses are those mentioned below:

Principal disease: necrotizing granulomatous vasculitis of small and medium vessels compatible with Wegener's granulomatosis affecting the central nervous system and both lungs.¹⁻⁵

Based on the autopsy and with a suspicion of a rheumatic disease as well as having ruled out all infectious causes, it was intentionally sought and immunofluorescence was performed both in the kidneys as well as in the central nervous system and lungs, where fibrinogen I deposition was observed. In the proposed Wegener granulomatosis there are no immune complex deposits. Variable deposits of IgG and IgM can be observed in small amounts. With these postmortem findings, another manner for studying the case was sought and an article was found that shows that these patients may have an increase in CD25 and CD4 positive T lymphocytes and it was suggested that there is an alteration in the regulation of these lymphocytes.⁶ CD25, CD4, CD8 and CD3, with CD8 and CD3 were negative, and positivity was observed for CD25 and CD4. Indeed, overexpression of CD25, CD4 with decrease of CD3 and CD8 lymphocytes was observed

Based on the above, concomitant alterations were as follows:

- Bronchiolitis obliterans
- Status post-right ventriculostomy
- Status post-brain biopsy
- Status post-tracheostomy, bilateral pleural effusion (500 ml D, 450 ml I) grade III malnutrition (38.2 k vs. 50 k)

In the other organs the following was observed. In the heart, cardiomyocyte hypertrophy can be observed indicating that the patient must have had heart failure. The coronary system did not demonstrate vasculitis.

The liver had a weight of 1500 g vs. an expected 1200 g and there was congestive hepatomegaly. Histologically there were no alterations in the portal spaces or in the lobule, with data only of congestion and extravasation of

erythrocytes. There was also data of shock, such as intraalveolar edema in the lungs, presence of acute tubular necrosis in the kidneys and fibrin thrombi in the microvasculature of various organs. With these findings, the following diagnoses were made:

- Congestive hepatomegaly (1500 g vs. 1200 g)
- Anatomic data of shock
 - i. acute tubular necrosis
 - ii. intraalveolar edema
 - iii. fibrin thrombi in the microvasculature of the lungs and skin

As an independent disorder that did not contribute to the principal disease, this patient had a history of colon transposition. We can see that there was serosal swelling when an opening was made into the colon and we observed that the wall was swollen and the lumen decreased. Histologically the colon showed congestion in the lamina propria and submucosally.

This is the piece that was subsequently dissected. The esophagus and stomach were left and the presence of a gastrostomy is noted. These are the serial sections where the esophagus was observed with a lumen of 0.1 cm in diameter, with 100% stenosis and a totally fibrotic wall (Figure 16).

In the best-preserved sections, we see the intact epithelium and wall fibrosis. Gastrostomy cuts showed extensive inflammatory infiltrate consisting of lymphocytes and neutrophils. There were also multinucleated giant cells unusual to the type of foreign body reaction and areas of necrosis, constituting a chronic peritonitis secondary to all the inflammatory processes. The stomach sections demonstrated intact epithelium without alterations and small intestinal cuts showed only areas of submucosal congestion. Independent alterations were as follows:

- Esophageal stenosis (100%) secondary to caustic bicarbonate ingestion (in the year 2009)
- Status postcolonic transposition (January 2011)
- Status post gastrostomy (January 2011)
- Chronic peritonitis with granulomatous reaction to foreign body

The kidneys were intentionally and especially studied in search of vasculitis. They had a weight within

what is expected. Bladder mucosa demonstrated congestion and grossly well-defined cortex of the renal medulla. The kidneys demonstrated congestion at the level of the glomeruli, in the interstitium and in the tubules. There are no data of vasculitis or of immune complex deposition. On reviewing the literature, it is described that in adolescents the presentation of Wegener granulomatosis is rare. It is described that with alterations of the central nervous system and in the lungs, the diagnosis can be made.⁷

The spleen weighed 170 g vs. an expected weight of 110 g. Histological characteristics were normal, and there was only congestion of the red pulp.

Bone marrow demonstrated normal cellularity. This is mentioned because many patients with rheumatic disease have bone marrow alterations. The endocrine system also did not present alterations. Pancreatic sections were observed with normal features. Adrenal gland, thyroid gland and gonads were without alterations.

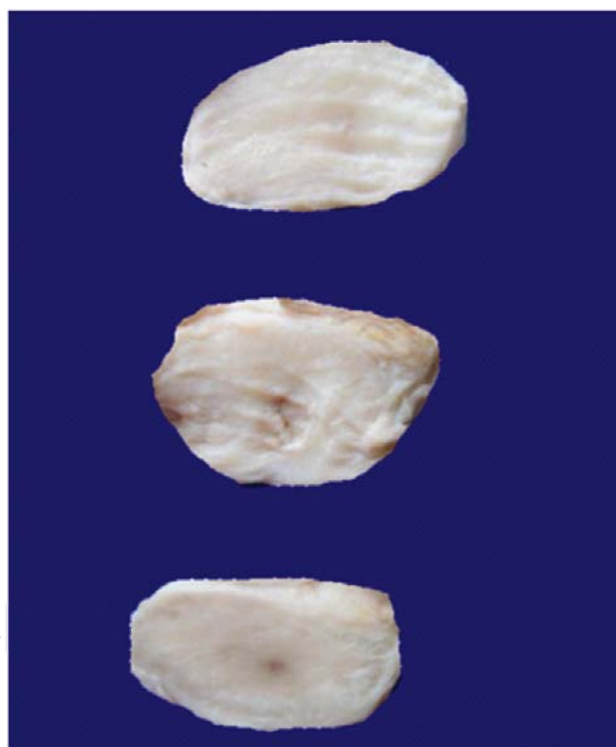


Figure 16. Transverse cuts of esophagus with lumen 0.1 cm of diameter and fibrotic wall.

Postmortem cultures were as follows:

- Hemoculture, CSF, right lung: negative
- Left lung, spleen, small intestine: *Escherichia coli*
- Colon: *Escherichia coli* (two morphotypes) and yeast

A review of the hospital files found that of 832 autopsies, postmortem diagnosis of Wegener granulomatosis was not included.

Rheumatology (Dra. Rocío Maldonado Velázquez)

Wegener's disease is very rare. There are only seven cases managed in the department, and this is the first case with CNS damage without any other manifestations. The most common presentation is renal and pulmonary damage; 95% of patients with Wegener begin with respiratory disorders and 70% with a renal lesion or develop it in the first 2 years. Only three cases have been reported in children with CNS presentation, which were all found on autopsy. Wegener's disease is difficult to suspect in the absence of respiratory symptoms.

Coordinator (Dr. Rómulo Erick Rosales Uribe)

This session has left us with a great lesson. However, in our environment, the presentation of Wegener's disease is extremely rare, and when presented with a case of chronic meningitis with ventricular dilatation, pleocytosis in the CSF due to mononuclear, hyperproteinorrhachia and hy-

poglycorrhachia, one must first suspect meningeal tuberculosis and, by exclusion, Wegener's disease.

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