

Immune Thrombocytopenic Purpura associated to Birth Confinement

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Abstract

The authors present the case of a birth-confined patient with peripartum thrombocytopenic purpura, who, 48 hours after delivery, develops puerperal endometritis, complicated with consumption coagulopathy. After emergency surgery intervention, consisting of splenectomy and hysterectomy, associated to corticotherapy, the post-surgery evolution is favorable, with the remission of the hematological panel. (Revista de Medicină de Urgență, Vol. 3, Nr. 1: 45-50)

Key terms

Collagen disease – SLE, immune thrombocytopenic purpura, puerperal endometritis, disseminated intravascular coagulation.

A patient, 26 years of age, arrives at the Obstetrics-Gynecology Clinic of a county Hospital, in advanced stage of labor, with intact membranes and single fetus in cranial presentation.

From the personal medical history, we note a pregnancy that developed in normal conditions (2003), a miscarriage (2003), active pulmonary tuberculosis (2003) and noteworthy, in the second semester of the current pregnancy, the appearance of some petechial lesions located at the level of the abdomen and inferior limbs which have been topically treated, not supported by medical documents.

The clinical examination at hospitalization indicates a patient in good general physical condition, hemodynamically stable: RR=16 breaths/min, BP=90/60 mmHg, PR = 90 beats/min., presenting hemorrhagic petechiae located at the level of abdomen and inferior limbs.

The lab tests revealed a normocrom normocitary anemia, (HGB = 10g/dl, HCT=31.3%, MCV=89.4fl, MCH = 29.4pg), leukocytosis ($L=18,000/\text{mm}^3$), thrombocytopenia ($PLT=11,000/\text{mm}^3$), the other tests being within normal limits, including coagulogram.

The patient delivered spontaneously, 5 hours after hospitalization, a male fetus, weighed 3000 g and Apgar' score 9 (at one minute)

One hour postpartum, the general clinical condition deteriorates with the aggravation of skin-mucous membrane hemorrhagic syndrome, consisting of gingival hemorrhage, petechial and generalized ecchymotic purpura and reduced perineal hematoma. Hemoleucogram is repeated and reveals an increase in the number of leukocytes ($L=22,000/\text{mm}^3$), the thrombocytopenia getting more severe to $6,000/\text{mm}^3$ platelets and prolonged bleeding and clotting time ($BT=7'30''$, $CT=8'30''$). Peripheral blood smear is taken, showing no evidence of thrombocytes.

It is decided a treatment with blood products transfusion. (RBC 3U, platelets concentrate 15U, FFP 8U, cryoprecipitant 10U, coagulation factor VII- (Novoseven-5 fl), corticotherapy (Solumedrol 1g/24h), IV IgG (Humaglobin 5g), antibiotherapy (Amoxicillinum-Acidum Clavulanicum 2g/12h), inhibitors of proton pump (Pantoprazolum 2fl/24h), inhibitors of prolactine secretion (Bromcriptinum 2 cp./day) and Ocytocice (Oxytocinum-4 fl., Ergomet-2 fl.).

Under this treatment, the clinical condition improves, the patient being non-feverish, without any other cutaneous-mucosal hemorrhagic lesions, with minimal vaginal bleeding, supple abdomen, tender to palpation in hypogastrium, increased in volume due to the uterus in retraction, the number of thrombocytes being $34,000/\text{mm}^3$.

At twelve hours postpartum, the thrombocytes are going down again to $4,000/\text{mm}^3$ with decreased PA to 70% and the presence of fibrine monomers.

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Abbreviations:

ITP - Immune Thrombocytopenic Purpura

SLE-Systemic Lupus Erythematosus

FFP-fresh frozen plasma

BT – Bleeding time (VN < 5 min)

CT – Clotting time (VN = 6-8 min)

ESR-Erithrocyte sedimentation rate

APTT –Activated Partial Thromboplastin Time (VN=25-35 sec)

PA% - Prothrombine Activity(VN=85%-100%)

ATIII % - Antihtrombine III (VN =84%-123%)

tPA-Plasminogen Activator Inhibitors

ELT-Euglobulin Lysis Time

FDPs-fibrin degradation products

MFPT-monomer fibrin procoagulation test

ANA – Antinuclear Antibodies

ANCA – Antibodies circulating towards the citoplasmatic components of the neutrophiles and monocytes.

PANCA – Antibodies Circulating Neutrophilical Anticito plasma

CIC – Circulating Immune Complex (VN<70UDO)

TTP – Thrombocytopenic Thrombotic Purpura

UHS – Uremic Hemolytic Syndrome

HELLP-acronym used to describe – hemolysis, elevated liver function tests and a low platelet count.

Due to the increased risk of bleeding and the limits of investigation and treatment, it is decided to transfer the patient to the Clinic of Hematology of Fundeni Bucharest Hospital, transportation made by Bucharest SMURD team. When SMURD team took off the patient, she was conscious, cooperating, GCS=15, RR=20breaths/min, SpO₂=93% (FiO₂=0.21%), PR=78beats/min, BP=115/60mmHg. Number of thrombocytes is 4,000/mm³.

During the whole period of air-transportation, the patient was monitored by EKG, PR, BP, SpO₂; she received oxygen by mask, perfusion on two peripheral intravenous, lines with SF 0.9% 500 ml and transfusion of 4U platelets concentrates, without modification of the hemodynamic status (Tabel no.1), being taken over on stationary clinical condition and carried to Fundeni Hospital by SMURD-Bucharest emergency team.

HOUR	15.35	15.52	16.15	16.30
GCS	15	15	15	15
RR (breaths/min)	20	22	22	20
SaO ₂ (%)	93	92	92	92
PR (beats/min)	78	77	80	79
BP (mmHg)	115/61	110/57	109/62	110/60

Tabel no. 1

In the hematological clinic of Fundeni Hospital, the following lab test were performed: hemoleucogram numbering leukocytes 16,000/mm³, thrombocytes 5,000/mm³; peripheral blood smear (S-6%, NS-78%, Eo-0%, Mo-0%) does not show signs of microangiopathic anemia. Hemostasis tests show modifications related to the thrombocytopenia (aPTT=36.4 sec, PA=117%, INR=0.95%, ATIII = 122%), lupic anticoagulant-negative, ELT=90min, fibrinogen = 466mg/dl, ESR=140ml/h, RF=95UI/ml, hepatic and renal function tests being normal.

Serological tests (for Epstein-Barr virus, cytomegalovirus, AgHBs, Ab.HIV, Ab.antiHTLV, VDRL) were negative, and the specific tests for collagen vascular disorders revealed ANA+++, double stranded DNA antibody titres negative, ANCA negative, PANCA negative, CIC= 43 UDO.

Myelogram through sternal puncture points hypercell bone marrow with left deviation, diffuse dishemoglobini-sation, eosinophilia, reactive lymphoplasmocytosis, medullary hemosiderin present in macrophage, slightly diminished in quantity with sideroblasts 4%. (images no. 1, 2). The abdominal ultrasound describes steatotic liver, with infiltrative aspect, and spleen of 12.4 cm, with enlarged uterus, uterine cavity relatively folded, without liquid content or remainders, on the uterine wall in the lower sec-

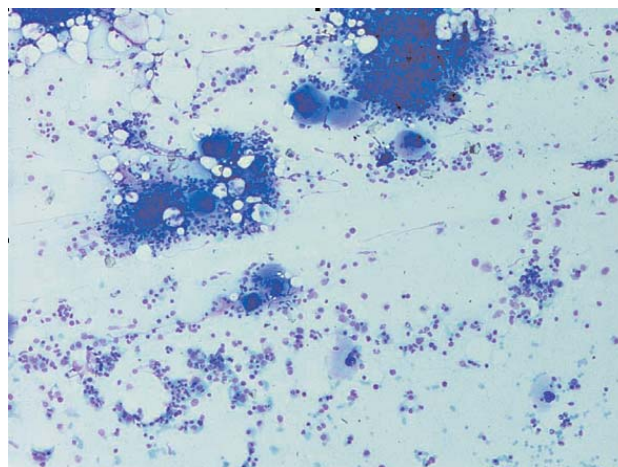


image no. 1, 2

tion is visible a polycyclical growth with hypoeccogenic areas and also the presence of ascites liquid inside the pelvis. A gynecological examination is undertaken, showing supple parameters at vaginal touch, at the examination with valves, ecchymotic cervix with external cervix orifice half-open occupied by a clot and multiple endocavitary clots.

It was instituted a treatment for hydroelectrolytic re-balancing, treatment of substitution with platelets concentrates 30U, FFP 24U, RBC 5U, corticotherapy (Dexamethasonum 32mg/day), IVIgG (EndobulinS/D500UI/day), antibiotic therapy (Meropenemum 3g/day, Amikacinum 1g/day), antifungal (Fluconazol 400g/day). Starting from the 3-rd day of hospitalization the general condition is getting worse, the patient becoming feverish (39.2 C) with the appearance of decubitus dyspnea and tachypnea, lower abdominal pain and metrorrhagia with foul-smelling lochia, the local clinical examination being relevant for puerperal endometritis.

Paraclinic data show as follows: prolactin test over 10 and positivation of fibrinolysin tests (tPA=3.7UI; ELT=100 min; FMT+++; D-dimers=1700mg/l; FDPs present), index of hypoxemy (PO₂/FiO₂)=215. Chest X-ray showed alve-

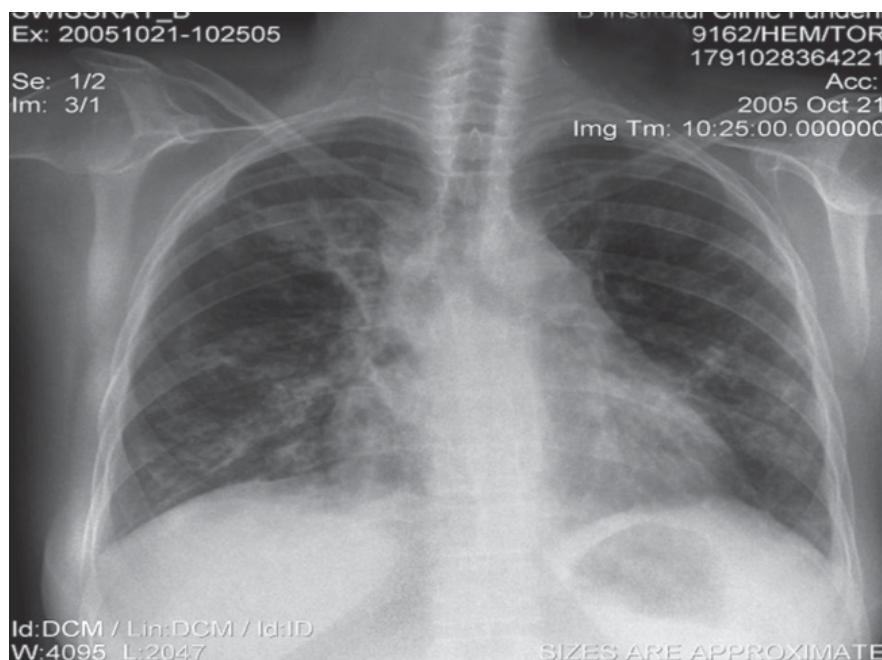


image no. 3

olo-interstitial infiltrates. (image no.3) The paraclinic evolution during the hospitalization is reproduced in table no. 2.

Due to unfavorable clinical and paraclinical evolution, the patient is transferred to the intensive care unit with the diagnosis of severe sepsis.

Initial therapy is completed with another antibiotic-Targocid (Teicoplaninum 400 mg) and anticoagulant HGMM (Enoxparinum 40mg).

It is decided the emergency surgery intervention. Intrasurgery revealed ascites in medium quantity, uterus enlarged in volume and hepatomegaly, being performed total hysterectomy, splenectomy, hepatic biopsy and of the ganglions from the spleen's hile (image no. 4). 24 hours post-surgery, the evolution was favourable, the patient being

non-feverish, with an increased number of thrombocytes from $72,000/\text{mm}^3$ to $200,000/\text{mm}^3$, leukocytosis (leukocytes= $27,000/\text{mm}^3$), the prolactin test under 0.5. The antibiotic treatment and corticotherapy (dexamethasonum 16mg/day) are continued. The bacteriological outcome revealed bronchial secretion without flora, nose and throat secretion with candida albicans and staphylococcus epidermides, uroculture and hemoculture were sterile, peritoneal liquid without flora. The result of histopatological exam is shown in the image no. 5. In the 9th day post-surgery, the patient presents 38.5 C fever and shiver, chest X-ray being within normal limits. Abdominal CT scan indicates a thin fluid layer in the splenic lodge at the contact with drainage tube, without intra-abdominal collections and with

Tabel no. 2

Hospitalization day	0	1	2	3	4	5	6
Chest X-ray	normal			alveolo – interstitial infiltrates			
Index of hypoxemia $\text{PaO}_2/\text{FiO}_2$				265		240	
Plateletes (count/ mm^3)	10,000	5,000	10,000	10,000	12,000	21,000	11,000
Fibrinogen (mg/dL)		466				232	257
D-dimers ($\mu\text{g/L}$)		1700					870
FDPs ($\mu\text{g/mL}$)		present					present
ELT (min)		90					100

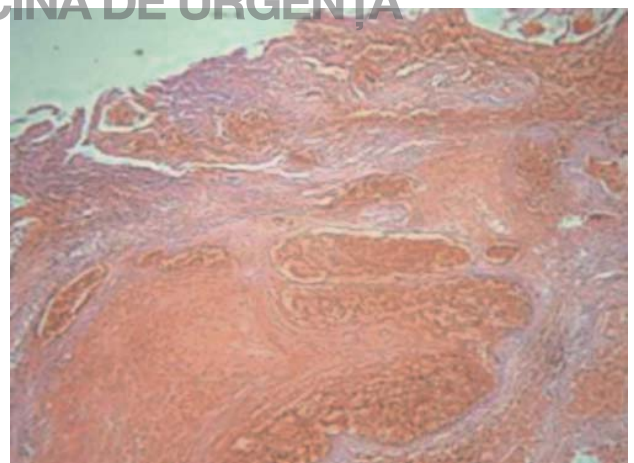
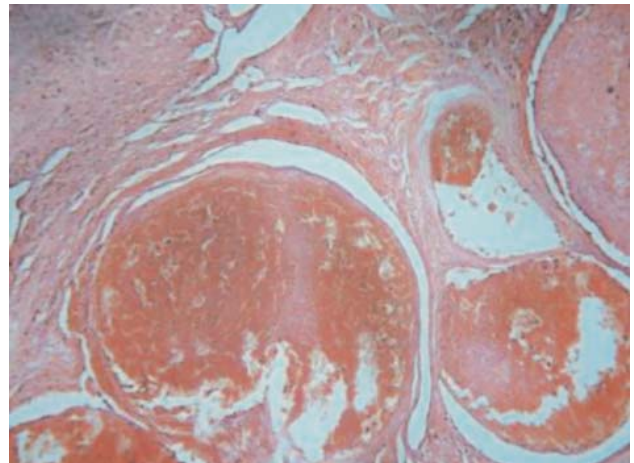
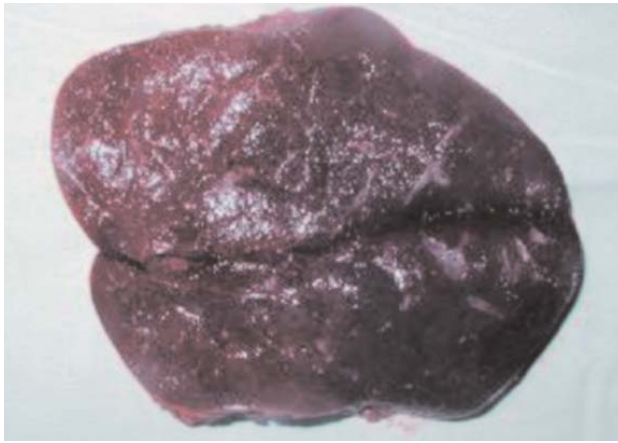


image no. 4. Splenectomy. Total hysterectomy. Hepatic biopsy. Biopsy of lymph nodes from spleen's hile

small, multiple abdominal-pelvic adenopathies. (image no.6) The antifungal (Fluconazol) and antibiotic-Invanz (Ertepenem sodium) treatment is continued, stopping the administration of Targocid and Meropenemum.

In a 32 post-surgery day, surgically healed, counting thrombocytes $656,000/\text{mm}^3$ and leukocytes $10,000/\text{mm}^3$, the patient is transferred to the Hematology Clinic for monitoring. Released from hospital 12 days later.

image no. 5. Histopatological exam. Extensive hemorrhagic necrosis of uterine endometrium (length 14 cm), with bulky interstitial hemorrhage involving the internal myometrium and the entire thickness of the uterine cervix. Intramural, in the uterine body, dilated blood vessels with obstructive intravascular recent platelet-fibrin clots

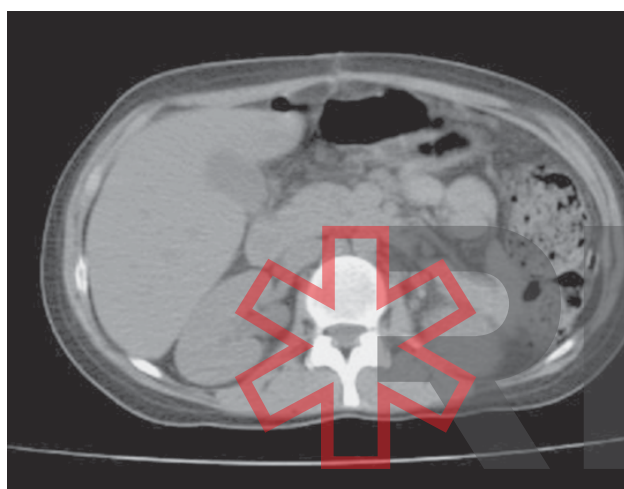
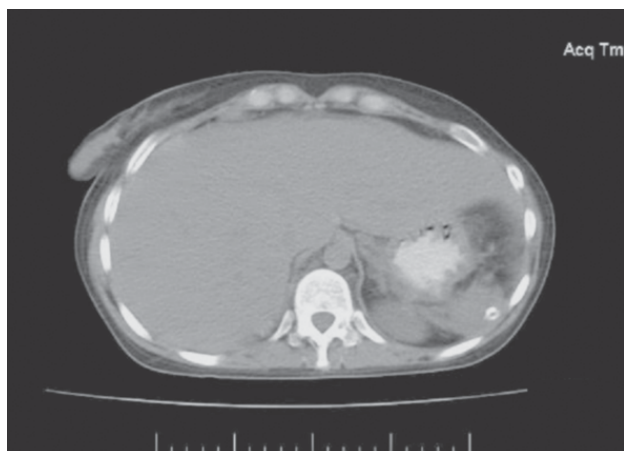


image no. 6. Abdominal CT scan

Discussions

ITP is a disease of young adult of average age, with an increased incidence in women, with insidious beginning, chronic evolution, self-limited, which can become unforeseeably complicated with severe life-threatening hemorrhages [1]. ITP and pregnancy often coincide due its increased frequency at women between 20-40 years, being difficult to recognize, as 8% of pregnant women present a slight thrombocytopenia (90, 000-100, 000/mm³) [1].

The ITP diagnosis during pregnancy is based on the presence of a marked thrombocytopenia (under 75,000/mm³) without an evident etiology or on settling it prior to current pregnancy [1].

Gestational thrombocytopenia, the most common cause of thrombocytopenia during pregnancy occurs in 5% of women at term, the platelet count returning to normal a few days postpartum (2); in the case we presented, the thrombocytopenia worsened one hour after delivery. The differential diagnosis between ITP and gestational thrombocytopenia is generally of little clinical importance as regards mater-

nal risk, but is more important as regards the fetus, due to major complications of neonatal thrombocytopenia [2]. The hemorrhage risk at delivery is explained by the fact that 10% of the infants born by mothers with ITP have a number of thrombocytes under 50, 000/mm³ and only 4% have thrombocytes under 20, 000/mm³. [2]. Maternal thrombocytopenia can be a significant indicator of complications during pregnancy such as preeclampsia and eclampsia or DIC associated to some acquired or congenital diseases.

In this case, preeclampsia and eclampsia were excluded based on clinical and paraclinical data, preeclampsia being a common cause for thrombocytopenia during pregnancy, over 15% of patients developing thrombocytopenia. [2]

Other possible causes for thrombocytopenia during pregnancy such as TTP-HUS are distinguished by the presence of hemolysis and microangiopathic modifications of the circulating erythrocytes, characteristics that are absent on the patient's peripheral blood smear.

Severe thrombocytopenia might be interpreted within consumption coagulopathy secondary to the puerperal endometritis, the argument being the fast favourable clinical and hematological evolution after the surgery intervention of removing the infectious hotbed. But the consumption coagulopathy secondary to the puerperal endometritis diagnosed based on the clinical criteria (fever over 38 C for two consecutive days after the first 24 hour postpartum without another apparent cause [3]), on risks factors (anemia, poor social-economic status, uterine traumatism) as well as on the positivating of fibrinolysis tests, started 72 hours postpartum. The low number of thrombocytes appears also in the immunological distruction of SLE and HELLP syndrome. Considering personal pathologic history of the patient and the presence of ANA intensively positive it was suspected a collagen vascular disease, but a precise diagnosis line could not be drawn between ITP and

thrombocytopenia associated to autoimmune diseases, as many patients with ITP have high values of ANA nevertheless they do not develop in time SLE [1].

HELLP syndrome characterized by microangiopathic hemolytic anemia, elevated liver function test (SGOT >70U/L) and thrombocytopenia (platelets <100,000/mm³), is the most common cause of thrombocytopenia at multiparous woman, occurring at approximately 30% of postpartum cases. Usually, gestational age is 32 weeks and associates complications including DIC, abruption placenta, acute renal failure and adult respiratory distress syndrome (ARDS). [4].

Thrombocytopenia may also be the initial symptom of HIV infection or a complication of AIDS disease; in the presented case, the lab tests indicated HIV antibody negative. [1]

There have been distinguished other possible causes of thrombocytopenia such as acute leukemia, aplastic anemia with atypical debut and myelodysplasia, by the exam of peripheral blood smear and bone marrow examination.

Conclusions:

1. Taking into consideration the absence of other causes of thrombocytopenia during pregnancy, the absence of splenomegaly and the aspect of medular aspirant, the ITP diagnosis is sustained.

2. All pregnant patients numbering thrombocytes below $100,000/\text{mm}^3$ should be clinically and laboratory examined in search of preeclampsia, coagulopathy or autoimmune diseases[5].

3. The optimal management of ITP during pregnancy involves the cooperation of the obstetrician, hematologist and pediatrician [5].

4. The emergency treatment includes platelets transfusions, intravenous immunoglobulin (IV IgG) and glucocorticoids[6].

5. Emergency splenectomy is necessary if the risk of bleeding is increased, complication due to the thrombocytopenia not responding to the medical therapy [1].

6. Tests for HIV and collagen disease are routinely done at the patients with thrombocytopenia [1]

7. The recognition of puerperal sepsis with consumption coagulopathy represents a medical and obstetrical emergency.

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