Rectus sheath haematoma (RSH)

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Introduction: Spontaneous RSH is very rare and small series have been demonstrated in literature. Proper and timely diagnosis of a hematoma within straight abdominal muscle significantly influences the way of treatment and the application of appropriate protocol for specific stage of illness. Case report: A 62-year old patient presented himself at hospital because of pains under RRC, with unclear clinical features, and only after repeated radiological diagnostic procedures we began the treatment with the protocol for identified stage of illness which took us to complete recovery and the patient got back to his every day activities. Conclusion: Even though rare, RSH imitates acute abdomen therefore proper diagnosis contributes to proper treatment. Treatment can be conservative, invasive and surgical.

Kay words: rectus sheath, hematoma, epigastric artery

INTRODUCTION

Spontaneous RSH is very rare and small series have been demonstrated in literature. First description of RSH was given by Richardson in 1857. Proper and timely diagnosis of a hematoma within straight abdominal muscle significantly influences the way of treatment and the application of appropriate protocol for specific stage of illness. Clinical features, ultrasound and CT are important for diagnosis. Clinical diagnosis can be wrong in 50% of cases. We’ll present spontaneous RSH incurred under clinical features of acute pain localized under patient’s RRC.

CASE REPORT

Patient G.Z., born in 1950, from Bar, 175 cm of body height, 96 kg of body weight, was admitted due to pain under RRC that started abruptly two days prior to his hospitalization at surgery department of General Hospital in Bar. The patient stated that he felt nausea and gastric acid in epigastria prior to mentioned sudden sharp pain. In personal anamnesis we discovered that he’s been operated an umbilical hernia 15 years ago, has had right leg transfemoral amputation 4 years ago and heart revascularization 2 years ago. Since 1991 he’s been treated for Diabetes mellitus, and since 2006 he’s been on insulin therapy. The patient denied to have taken insulin subcutaneously into abdominal wall.

Having examined his abdomen, abdominal wall was slightly above the line of thorax, palpatorily painful under RRC in projection to midclavicular line of resistance, cca 6x4 cm extremely painful when palpated.

On admission, on 19.02.2012, the patient’s blood pressure was 110/70, blood tests were taken and the results were: Wbc 4.7, rbc 4.90, hgb 128, hct 43, plt 165, glycemia 4.3, urea 5.6, creatinine 127, bilili 11.7, ast 30, alt 48, amylase in serum 64; echo of abdomen as well as chest x-ray (lung and heart) and abdomen were made. The patient was hospitalized and his treatment started with crystal solutions, continuing with our diagnostics.

On 20.02.2013 blood tests were repeated and the results were: Wbc 4.5, rbc 4.24, hgb 115, hct 37, plt 145; gastro-duodenum x-ray was done with Ultravist 300 used as contrast during the scopy; on examined graphy there was no visible passage of the contrast through stomach wall. During control abdominal ultrasound, liver had lobular contours with sub-diaphragm calcification of 10mm, other test results were regular. Subcutaneously, i.e. in m. rectus abdomin on the right, there was a visible heterogeneous spindle-shaped change, over 10 cm lengthwise and 4 cm in diameter corresponding to a hematoma. Abdomen MSCT was done – liver with regular dimensions, with sinusous contours and calcification in VIII segment, 15 mm alteration. Bile, pancreas, milt and both adrenal gland cavities were within physiologic limits. Both kid-
neys were with regular dimensions and parenchyma, regular pyelo-calyx system with small parenchyma cists up to 10mm. A. abdominals was with regular lumen and marginal calcifications. Lymph glands were not enlarged. In retroperitoneal space there was no free liquid in the abdomen; no pathological changes in small pelvis. On the right in m. Rectus a spindle-shaped change was visible, 100x40 mm big which upon given contrast demonstrated zones of hemorrhage – result corresponded to a hematoma. There were no infiltrative changes or destructive ones on bone structures. (Pictures 1, 2) Coagulation status - PT 11.3, INR 1.0, aPTT 24.1". Fothergill’s sign - positive. Carnett’s sign 1926g.-positive. Lanffot sign – appeared below and more lateral respect to described hematoma on 29.02.2013. Treated by conservative therapy.

Control abdominal eco done on 25.02.2013. in m. rectus abdominis on the right, hetero-ecogenous change has been noticed, 68x20mm hematoma. Other test results were regular. The patient has been released for further home treatment with physical therapy as per prescribed protocol... with the diagnosis. Spontaneous hematoma of straight abdominal muscle.

**DISCUSSION**

Some studies, such as the one of Cerdan et al, publish two cases a year incurred spontaneouslyyl. Generally speaking, incidence is not well defined since posttraumatic cases are more often. The most common causes of RSH are: trauma, anticoagulant therapy, degenerative illnesses of blood vessels, subcutaneous injecting, pregnancy, cough, obesity, hematologic illnesses, abdominal surgeries, lesion caused by trocar during laparoscopic surgery, high blood pressure. It starts with acute pain which, depending on anatomic distribution, imitates frequent causes of acute abdomen such as appendicitis, acute bile calculus, perforated ulcer of gastro-duodenum and other. Hematoma imitates acute abdomen as a consequence of irritated peritoneum.

Due to anatomic ratio, 70,80% of hematoma is located infraumbilically because the muscle and blood vessels are feebly protected. There is a bigger tendency among women in respect to men, 3:1. The fact that it is more often among women is due to remained lesions caused by stretching of epigastric blood vessels during pregnancy, when the abdominal circumference radically changes; also, it is more often among older women. Hematoma under the line of areuata is a consequence of hemorrhage from inferior epigastric artery and above the same from superior epigastric artery. Ultrasound is sensitive in 85-96% and CT in 100% of hematoma diagnosis. The mass in straight abdominal muscle can be noticed in 63% of cases in the series of Mayo clinic out of 126 patients.

In 1946 Taske presented for the first time 100 cases and found out that it is more frequent at right side (60%) and in inferior quadrant (80%).

Symptoms and indications are: abdominal pain, abdominal wall tumefaction, abdominal wall echimosis, nausea, vomiting, peritoneal irritation, tachycardia, fever, abdominal tumidity, cramps.

Sudden heavy hemorrhage can cause death . Classification Berne and similar . Divides RSH in three types by using CT:

- **Type I** – unilateral or located in muscles
- **Type II** – bilateral or not located in muscles
- **Type III** - Dilatation in paravesical fossa and peritoneum.
**CONCLUSION**

Even though very rare, RSH imitates acute abdomen therefore proper diagnosis contributes to proper treatment of this illness. Treatment can be conservative, invasive and surgical.

Treatment of the type I is conservative if hemodynamically stable; analgesic is prescribed, ice is applied locally and compression of hematoma with rest. In extremely rare cases blood transfusion is needed, and absorption of hematoma lasts for about a month. In the series of Mayo clinic, almost 90% of cases got cured with this type of treatment.

Type II and III can be treated conservatively if hemodynamically stable when resolution of hematoma lasts 2-4 months for the type II, i.e. up to one year for the type III, otherwise it is treated surgically by hematoma evacuation and ligation of epigastric blood vessels, also, if necessary, with drainage, and percutaneous embolization. First Gelfoam technique of embolization was described in 1980 by Levy. Angiography can be used for diagnostic and therapeutic purposes.

**SUMMARY**

Uvod: Spontani RSH je vrlo rijekad i male serije su prikazane u literaturi. Pravilna i pravovremeno postavljena dijagnoza hematoma u pravom mišiću trbuha bitno utiče na način liječenja i primjenu odgovarajućeg protokola za stadijum bolesti.

Prikaz bolesnika: Pacijent star šezdeset dvije godine koji se javlja u bolnicu zbog bolova ispod DRL, sa nejasnom kliničkom slikom i tek nakon ponovljenih radioloških dijagnostičkih procedura započinje s liječenje protokolom za stadijum oboljenja što vodi ka potpunom izliječenju i vraćanju pacijenta svakodnevnim aktivnostima. Zaključak: Iako vrlo rijetka, RSH imitira akutni abdomen, tako da tačno postavljena dijagnoza doprinosi pravilnom načinu liječenja. Liječenje može biti konzervativno, invazivno i hirurško.

Ključne riječi: m. rectus abdominis, hematom, epigastrična arterija.

**REFERENCES**
