CASE REPORT

Rare complications of pregnancy: aortic cystic medionecrosis, gallbladder carcinoma, Hodgkin lymphoma

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Abstract

The authors present cases on rare but serious complications in pregnancy and puerperium concerning women with cystic aorta medionecrosis, gallbladder carcinoma and Hodgkin lymphoma. They describe the prognosis of pregnant women and their newborns with oncological and non-oncological malignancies while stressing an individual approach.

AORTIC CYSTIC MEDIONECROSIS IN PREGNANCY (TWO CASES)

While rare, an obstetrician can encounter dissection of the aorta and other large vessels in the course of pregnancy. They can be experienced either separately or as part of different syndromes. In the latter situation, there is a chance to establish the diagnosis of this pathological condition, preferably prior to conception. However, warning manifestations, if any, are frequently very non-specific, which frequently leads the obstetrician to not consider them within the scope of differential diagnostics. The consequences can be very severe and frequently even fatal for the pregnant woman.

Case 1

In a primipara aged 32 years, a diagnosis of Marfan syndrome was established in her childhood. The patient's father had undergone surgery for aortic valve insufficiency.

The woman had been followed for her basic disease, of course with an emphasize put on cardiology monitoring. Prenatal care was also undertaken in close cooperation with a cardiologist. In the 18th week of pregnancy, dilatation of the ascending aorta was found, which did not progress during the course of the pregnancy. In the 35th week of pregnancy, she was hospitalized in the cardiosurgery department for thoracic pain of sudden origin, where aortic dissection was diagnosed. An acute caesarean section was implemented with simultaneous cardiosurgery intervention and replacement of the ascending aorta and aortic valve with a prosthesis; additionally, plastic surgery on the mitral and tricuspid valves was carried out. There were no complications in the post-operative period. A boy of body weight of 2650 g and length of 43 cm was born. After a recovery period in the intermediate care department, he was discharged in good condition.

Both the patient and the newborn were discharged to home care in good condition. Of course, the mother continues with regular monitoring.

Case 2

A patient aged 33 years was hospitalized, in the gynecology and obstetrics department in the 36th week of pregnancy, for onset of uterine contractions. During this time there was a sudden onset

of dyspnea and pain in the thorax. This was her second pregnancy. The first delivery concluded with a CS.

Her familial history included the fact that the patient's father had been diagnosed with an aortic aneurysm. In the course of a cardiology consultation, during hospital admission, a hemodynamically insignificant lung embolism was not excluded; in the ECHO of the heart, a slightly dilated ascending aorta and mild pulmonary hypertension was observed, however, no manifestations of dissection of the aorta were observed. In the laboratory, there was an elevation of D-dimers (8 000 ng/ml) , while other parameters were within normal limits. The patient had physiological O2 saturations; the ECG showed a sinus rhythm and mild tachycardia (about 90 b/min), and the patient had a good pulse. The persistent dyspnea led to a CS in the 36th week, which was completed without complications with the delivery of a healthy girl (weight of 2 580 g, length of 47 cm).

Two blood transfusions were administered in the post-operative period for progressive anemia. A lung scintigraphy, which was indicated in the post-operative period, did not demonstrate any lung embolisms. During evaluation of the lung skiagram, early stage pneumonia was considered. The previously observed elevation of D-dimers, decreased in stepwise fashion. A cardiology follow-up revealed no new pathological conditions. However, on the morning of the third day after CS, the patient collapsed suddenly, while on the toilet – subsequent cardiopulmonary resuscitation was unsuccessful.

The autopsy finding was as follows: Cardiac tamponade from a ruptured thoracic aorta within the framework of cystic medionecrosis.

Erdheim-Gsell cystic medionecrosis of the aorta is described as a mucoid degeneration of the tunica media of the aorta with a loss of elastic fibers (Candinas 1987; Drews *et al.* 2003; Illchmann-Crist 1956; Winkler Edel 1987).

Its cause is unknown. It exists either independently or within the framework of Marfan syndrome (Drews *et al.* 2003; Nawata & Morota 2009; Saruk & Eisenstein 1977). Histology can reveal multiple defects of the media to varying extents (Candinas 1987; Sadowski *et al.* 2006).

With regard to symptoms, an aortic dissection has a similar course as an aortic aneurysm. The aortic wall is weakened and there is high pressure in the aorta, which damages and partially tears the aorta and blood penetrates into the wall of the vessel. The blood flowing through the aorta wall forms a second vascular cavity. This causes the lumen of the original vessel to be compressed. However, in the final stage, the blood flow returns to the original vessel or breaks out of the vessel. These conditions are frequently associated with thoracic pain. However, certain conditions can obviously be solved with surgery if there is an early diagnosis (Gama *et al.* 2009; Janion *et al.* 2006; Stout *et al.* 2010). The clinical manifestation of the disease is particularly characterized by development of a dissecting aortic aneurysm with frequently fatal consequences (Sadowski *et al.* 2006; Winkler *et al.* 1987).

The case reports presented demonstrate that even possible knowledge of a pathological condition in the aorta in a pregnant woman, may not always lead to a termination of the pregnancy under planned and non-acute conditions. This is in agreement with data from the literature (Birsner *et al.* 2008; Gimeno Gascón *et al.* 1977). The literature dealing with this disease in pregnancy is rather poor and focused on case reports. A larger group of pregnant women, in which aortic rupture occurred based on cystic medionecrosis revealed in the course of pregnancy, was presented by Gimeno Gascón *et al.* (1977). Gama *et al.* (2009) described a rupture of an aneurysm in the ascending aorta during pregnancy. Badmanaban *et al.* (2003) published on a traumatic rupture of the aorta during pregnancy. A rupture of the pulmonary artery in pregnancy, associated with an open ductus arteriosus, was described by Green and Rollason (1992).

Ritz and Fritsch (1966) published a case report concerning a post-operative aortic rupture associated with aorta coarctation. Stout *et al.* (2010) and Gama *et al.* (2009) published on the repair of the rupture of a dissecting aorta during pregnancy.

If the pathological conditions of the aorta are not established by early diagnosis, the obstetrician has nearly no chance to prevent possible fatal consequences in the pregnant woman. A very complete patient history can at least offer a chance to recognize at risk pregnant women. The prenatal care in such cases will obviously require close interdisciplinary cooperation between obstetricians and cardiologists.

GALLBLADDER CARCINOMA

A patient aged 28 years, primigravida, primipara. No important data in her personal and family history, non-smoker. Menarche at 15 years of age, cycles 28/6.

Pregnancy – amniocentesis performed due to elevated alpha-fetoprotein (AFP) in the 18th week – physiological karyotype of the fetus. In the 25th week, she was hospitalized for suspected preterm premature rupture of membranes (pPROM), which was, however, not demonstrated. The body weight increment during pregnancy was of 4 kg per 64 kg.

The patient was transferred from a county hospital to the perinatological center in the 30th week of gestation after cholecystectomy, which was carried out for acute phlegmonous cholecystitis in cholecystolithiasis in the 28th week of pregnancy. Histology demonstrated chronic catarrhal cholecystitis with pedunculated, exclusively exophytic tubular adenocarcinoma of the gallbladder infiltrating the stroma, but not growing into the gallbladder muscles. In the post-operative period, diagnosis of choledochus dilatation was established with elevation of transaminases.

After admission to our department an endoscopic retrograde cholangiopancreatography (ERCP) was performed with a papillosphincterectomy and removal of two choledochus bile stones. For the entire period of hospitalization, the patient was afebrile. Induction of fetus lung maturation with corticosteroids was indicated. The pregnancy was terminated on the 15th day of hospitalization, in the 32nd week of pregnancy by primary caesarean section (CS) for a breech presentation of the fetus. A female fetus was delivered, 1350 g/39 cm, Apgar score 8/10/10. Following CS the newborn was transferred to the neonatological intensive care unit (NICU). On the 5th day after CS, the mother was transferred to the neonatological department where she stay together with her child. The oncologist's diagnosis was a T1a N0 M0 without requirements for any further treatment. Dispensarisation at working site of the oncological team in the county hospital were recommended.

No recurrence has been observed in the mother two years after intervention. There was no complications in newborn after delivery and now there is normal development of the child at 2 years of age.

The occurrence of carcinoma of gallbladder and extrahepatic bile tract in pregnancy is extremely rare and only case reports are available (Albores-Saavedra *et al.* 1981; Balderston *et al.* 1998; Dhiman *et al.* 2004; Marasinghe *et al.* 2008). Apart from detection during pregnancy, this is frequently a random finding during cholecystectomy for other indications (Devoe *et al.* 1983; Donegan 1983). There was no unambiguously demonstrated association in terms of etiopathogenesis between the occurrence of gallbladder carcinoma (Kimura *et al.* 2005) and cholelithiasis (Olivas Mendoza *et al.* 2005; Pandey *et al.* 2003), but in 2–3% of cases of cholelithiasis, gallbladder carcinoma has been found. Effects of estrogens, parity, genetic factors, ethnicity, etc. have also been studied. In terms of histology, this is most frequently reported adenocarcinoma (Albores-Saavedra *et al.* 1981; Kimura *et al.* 2005; Sadoon & Hodgett 2008). Some authors have described the importance of a sonographic examination in the diagnostic process (Gojnic *et al.* 2005; Pant *et al.* 1986). In therapy, surgery plays the most important role, which can be supplemented by chemotherapy, however, the prognosis is rather pessimistic. If the disease is not detected early with subsequent radical intervention, then survival of 5 years is only reported in 3–5% of cases (Kordač *et al.*1991; Tominaga & Kuroishi 1994; Stensheim *et al.* 2011).

HODGKIN LYMPHOMA

Patient aged 37 years, 3-gravida, 2-para. Data from patient history: family history negative, personal history includes psoriasis since age 10 years, repeated pharyngitis early in her life prompting an adenotomy and tonsillectomy, menarche at age 12 years, menses regular (28/4). At age 24 the patient underwent a surgical intervention for a cyst on the left ovary. Two years before the current pregnancy, the patient was treated for secondary sterility including laparoscopy, which revealed endometriosis. The current pregnancy was after in vitro fertilization (IVF). Amniocentesis, due to the patient's age, was carried out in the 18th week – revealing a normal karyotype. The patient was diagnosed with influenza three months before admission to our department; the patient also had nodular syndrome in right supraclavicular area for the 6 weeks prior to admission. The patient was admitted to our department in the 27th week of pregnancy, based on the recommendation of her practitioner (i.e. for a one-week sub-febrile condition, nodular syndrome in the supraclavicular area, anemia and elevation of transaminases). After admission the patient was observed to have anemia, leukopenia and lymphopenia. Additionally, her oral glucose tolerance test (oGTT) was positive and she had a persistent elevation of body temperature (37–38 °C). Antibiotic therapy was started; extirpation of a right supraclavicular node was carried out and based on histology, a malignant lymphogranuloma of nodular sclerotic (NS) type was diagnosed, i.e. Hodgkin lymphoma, cellular stage.

After consultations of an oncologist, neonatologist and obstetrician, a termination of the pregnancy by primary caesarean section (CS) was indicated (after providing induction of fetal lung maturation with corticosteroids).

The pregnancy was terminated in the 28th week of pregnancy with a delivery of female fetus 1410 g/40 cm, Apgar score 9/10/10; the newborn was hospitalized in the neonatological intensive care unit. The post-operative course was without complications for the mother, with only intermittent sub-febrile episodes. Lactation was discontinued.

Additionally, the staging examinations indicated by the oncological team were completed; a stage IIIb was established. On the 14th day after the CS the patient was transferred to an oncological department to initiate systemic chemotherapy.

Two years after treatment, the patient has experienced no manifestations of any recurrence. Development of the child corresponds to her age.

The occurrence of malignant tumors in pregnancy is relatively rare. Malignant lymphoma in pregnancy occurs at a rate of 1:6000, the most frequent occurrence being reported in the 13 to 35 age group. It can often be asymptomatic and the first manifestation, in 80% of patients, is an enlarged peripheral node; the diagnosis is then established based on histological examination. There is a tendency to shift therapy to the second half of pregnancy. The course of the disease is not affected by pregnancy and discontinuation of pregnancies does not improve the survival of patients. The treatment is individualized, based on staging and gestation age of the fetus. Actinotherapy is preferred for isolated cervical adenopathy; preferably, total irradiation should be

avoided. Chemotherapy should also be avoided during the early stages of pregnancy, but it is considered relatively safe in the latter stages. If the mother is free of serious symptoms, then it is possible to wait until maturation of the fetal lungs.

Non-Hodgkin lymphoma (Israel *et al.* 2010) is less common during pregnancy, but the majority of cases described included lymphomas with poor grading and thus also a poor prognosis, where it was only possible "to control" the disease during pregnancy (Rangel *et al.* 2010).

Case reports are presented concerning malignant diseases originating in the course of pregnancy. Management of these conditions was based on individual and interdisciplinary opinions from obstetricians, neonatologists and oncologists. It is necessary to take into account the clinical condition of the mother, fetus viability and therapeutic possibilities. The decision process also includes the opinion and intention of the patient, as an integral part of the decision making process. The case reports presented here document the potential for a good prognosis of survival for both mother and newborn. Waiting until the fetus viablility and induction of lung maturity seems to be beneficial.

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