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Case Report Open Access

Kidney Tumor in Pregnancy

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Abstract

Background: The main objectives of this clinical case presentation were to determine the real cause of a young hypertensive pregnant patient.

Methods: I present the clinical case of a young women patient age 21, pregnant in 32 weeks, which came for a consult because she had headache, dizziness and bilateral symmetric white and soft oedema of the legs. Her blood pressure value was determined as being BP=220/130 mmHg. The urinary examination had shown a proteinuria 20 g/dl. A hypotensive treatment was innitiated with allowed medication during the pregnancy, but the blood pressure values do not completely normalize BP=160/90 mmHg. Because the patient had bilateral lumbar pains an abdominal ultrasound was performed, although innitialy these symptoms were interpreted as being linked to the pregnancy, and surprisingly a left renal tumor formation of 4,5/3,5 cm was discovered. The plasma renin level was determined as being 198 ng/ml because of the excess secretion of this substance by the renal cell tumour. The presence of the proteinuria and the lumbar pains should not be interpreted only within the pregnancy context, as these could have also other causes, as the renal cell tumour just like in the above mentioned case. After the patient had given birth, an abdominal CT was performed and confirmed the presence of the right kidney tumor and also a i.v. Urography was performed and showed lacuna image at the level of the right kidney. After the patient had given birth, a right nephrectomy was performed ,and the histopathological examination from the tumour formation that has been extracted and releaved clear cell renal carcinoma.

Results: The presence of the arterial hypertension and proteinuria is difficult to interpretation in context of pregnancy. Usually, in the last weeks of the pregnancy presence of the proteinuria and high blood pressure and bilateral symmetric white and soft oedema of the legs should not be interpreted only within the pregnancy context, as these could have also other causes, as the renal cell tumour just like in the above mentioned case.

Conclusions: The plasma renin level must be performed as a screening test in young pregnant patients, because the blood pressure, as a real cancer marker can draw the attention upon a renal cell tumour diagnosis, not being interpreted only as high blood pressure in the pregnancy context as possible preeclampsia-eclampsia imminence.

Keywords: Pregnant; Arterial hypertension; Kidney tumor

Introduction

The main objective of this case report was to find the real cause of a young hypertensive women patient. Because the appearance of the high blood pressure is a usually and expected phenomenon in the pregnancy, especially in the last month of pregnancy , the true is that we have intention to interpreted the arterial hypertension only in context of pregnancy and we didn't take into account others possible causes of high blood pressure in this clinical context . We must to investigate with serious attitude in our medical practice, the hypertensive pregnant patients also in the direction of secondary hypertension and we have possibility to found unexpected others causes of high blood pressure, like in the clinical case follow to present.

Kidney cancer is among the ten most common and most deadly malignancies. It usually occurs in the fifth to seventh decade of life and is more frequent in men than in women. Only a small number of cases occur in young adults [1].

Malignancy during pregnancy is a rare event. It is estimated that less than 0.1% of pregnancies are complicated by any type of neoplasm and only 0.0013% (approx. 13 in 1,000,000 pregnancies) by urinary cancer [2]. These estimates are based on a linkage of the Californian Cancer Registry and data obtained from maternal/neonatal hospitals of California in the USA. Kidney cancer is the most common of those, which means that 2-3 pregnant women should present with it every year [3].

Patient and Methods

I present the clinical case of a young women patient age 21, pregnant in 32 weeks, no smoker, primipara (this was the first pregnancy), without history in the past about arterial hypertension, kidney disease or preeclampsia, which came for a consult because she had headache, dizziness, bilateral lumbar pains and bilateral symmetric white and soft oedema of the legs. Her blood pressure value was determined with belt tension meter as being BP=220/130 mmHg. Physical examination revealed: rhythmic heart sounds, increased intensity of sound II in the aortic area, rate heart 82 bates/minutes, vesicular sounds normal, Giordano manevra positive in the left side, costovertebrale and costomusculare points positive in the left side, pitting and white edema of the legs. The methods utilized for determination the value of blood pressure were belt tension meter. To exclude a possible feocromocitoma the level of serum catecholamines (metanefrina=5 pg/mL, normetanefrina=10 pg/mL[3]) and urinar catecholamines (metanefrina=13 ng/mL, normetanefrina=23 ng/mL[2]) was performed but the results was in normal range. The urinary examination had shown a proteinuria 20 g/dl. The level of ureea=32 mg/dl and creatinina=0.9 mg/dl was also in normal range. All other blood tests was in normal range. Ecocardiography of the heart was normal excluded coarctation of the aorta as a possible cardiovascular

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cause of a secondary high blood pressure in pregnancy and d't shown left ventricular hypertrophy this suggest that the high blood pressure was not for a long period of time ago. An eco-doppler of renal artery should be performed to excluded renal arthery stenosis as a possible cause of high blood presure but this is difficult to interpretate in context of pregnancy for this reason was repeated after pregnancy but was normal.

Because the patient had bilateral lumbar pains an abdominal ultrasound was performed, although innitialy these symptoms were interpreted as being linked to the pregnancy, and surprisingly a left renal tumor formation of 4,5/3,5 cm was discovered (Figure 1).

The plasma renin level was determined as being 198 ng/ml because of the excess secretion of this substance by the renal cell tumour.

The diagnosis was right kidney tumor, severe secondary high blood pressure, pregnancy in evolution 32 weeks.

A hypotensive treatment was innitiated with allowed medication during the pregnancy, nifedipine 10 mg/day in the morning and labetalol 100 mg an half of drug (50 mg)/day in the evening but the blood pressure values do not completely normalize after two weeks, decrease only at the value BP=160/90 mmHg. For this reason was increase the dosage of nifedipine at 20 mg/day and the value of arterial hypertension become after one week BP=140/90 mmHg.

After the patient had given birth, an abdominal CT (Figure 2) was performed and confirmed the presence of the right kidney tumor and also a i.v. Urography (Figures 3 and 4) was performed and showed lacuna image at the level of the right kidney.

After the patient had given birth, a right nephrectomy was performed, (Figure 5) and the histopathological examination (Figure 6) from the tumour formation that has been extracted and releaved clear cell renal carcinoma.

Surgical excision of the lesion was carried out because of the size of the tumor, and the abdominal eco suggest that the lesion might be of cancerous origin. The method was right nephrectomy- i.e. nephron-sparing excision of the lower-pole renal tumor, wasn't chosen because of features of the tumor in which signs of infiltration of the surrounding organs were evident, and the young age of the patient. The right flank position was safe for the patient.

After pregnancy and right nephrectomy the evolution of the patient was favorable with normalization the value of blood pressure without drugs. The patient refused to follow protocol of therapy with radiotherapy and chimiotherapy.

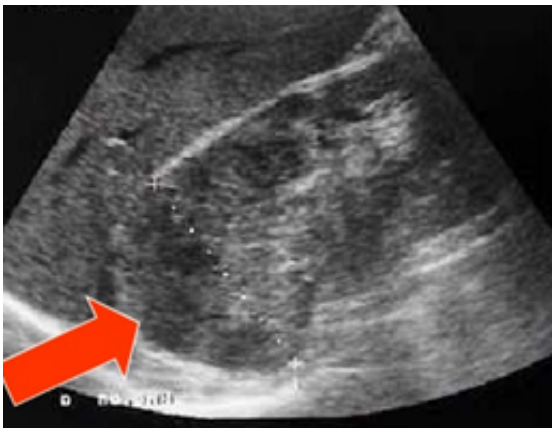

Figure 1: Abdominal Eco-Right Kidney Tumor.

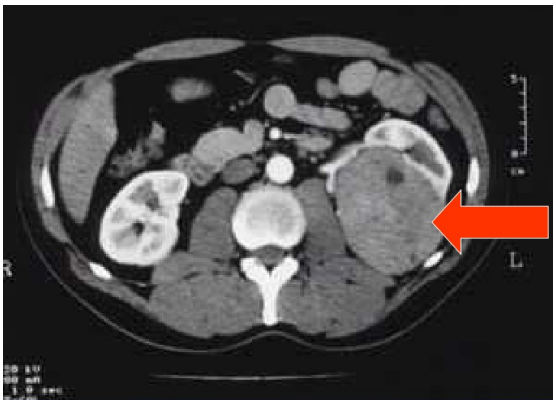

Figure 2: Abdominal Ct – Right Kidney Tumor.

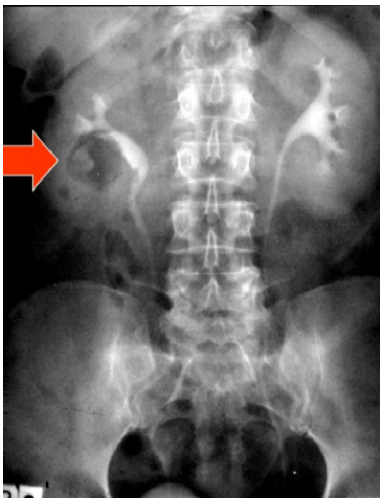

Figure 3: UIV-Right Kidney Tumoral Syndrome-Lacunar Image.

Figure 4: UIV–View Image Lacunar Image Right Kidney.

Discussion

The presence of the proteinuria and the lumbar pains should not be

Figure 5: Right Kidney Tumor Section.

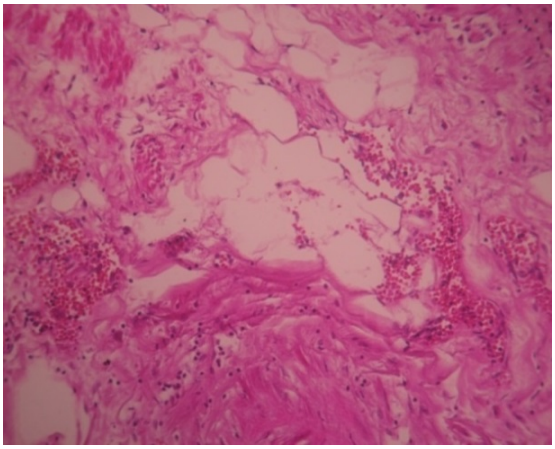

Figure 6: The Histopathological Examination.

interpreted only within the pregnancy context, as these could have also other causes, as the renal cell tumour just like in the above mentioned case.

The presence of the high blood pressure and the proteinuria, are difficult to interpretation in context of pregnancy. Usually, in the last weeks of the pregnancy presence of the proteinuria and high blood should not be interpreted only within the pregnancy context, as these could have also other causes, as the renal cell tumour just like in the above mentioned case.

Renal cell carcinoma is seen most frequently after childbearing years, but occasionally is diagnosed in pregnancy [4]. The pregnancy demands special considerations in terms of the diagnostic evaluation and management. A case of a patient with renal cell carcinoma diagnosed in the first trimester of pregnancy, which suddenly enlarged at the end of the second trimester, was presented [4]. She underwent radical nephrectomy after delivery. Since the mother's welfare is the primary concern, surgical management should not be delayed [4].

This case of renal cell carcinoma was diagnosed in the first trimester of pregnancy comparativ with my clinical case which was pregnant in 32 weeks. In the both clinical cases radical nephrectomy was performed. This is an unusual case report of high blood pressure in pregnancy.

The genetics elements in high blood pressure induced by pregnancy are so far less known and less studied, although they can be essential for developing of some efficient prevention measures. The role of an unique autosomal recessive maternal gene, the existence of a fetal genetic component and of a fetal - maternal interaction within the placental bed, the genetic determinism of a possible immune mechanism correlated with the major histo compatibility system, the genetic link to chromosome 1 are just few of the elements that have so far been marked out by research. If the high blood pressure appears in pregnancy before the age of 30 and shows recurrence in successive pregnancies, the prevalence of chronic blood pressure and renal affection grows significantly.

In 1986, Walker and Knight [5] reviewed the presentation of renal cell carcinoma during pregnancy and found that the commonest presenting symptoms of such tumours were a palpable mass (88%) and pain (50%). Hematuria and hypertension accounted for 47% and 18% of cases, respectively. A subsequent review has suggested that there has been a change in the presentation of renal cell carcinoma in pregnant women, with diagnosis now more frequently made incidentally during ultrasound examination performed for other reasons [6-8]. In addition, hypertension, especially during the third trimester, is often induced by pregnancy and related to pre-eclampsia. This means that renal cell carcinoma may not be considered as a potential cause for such symptoms, thus leading to delay in diagnosis and treatment.

Diagnostic evaluation of the pregnant patient with possible renal carcinoma requires special consideration of non-invasive techniques and as little radiation exposure as possible to mother and fetus. As a first step, urine should be sent for cytological analysis. In non-pregnant patients intravenous pyelography (IVP) and abdominal CT are the modalities frequently employed in the evaluation of renal tumours, but there is no proven safe threshold dose of radiation exposure to the fetus [9]. Abdominal ultrasound along with abdominal CT can adequately identify, differentiate between, and stage solid renal masses in most cases, and with their avoidance of radiation exposure to the fetus these are the investigations of choice.

Indeed, ultrasound has a similar sensitivity (85%) to that of IVP and CT for renal masses greater than 3 cm, and is much more sensitive than IVP for renal masses between 2 and 3 cm (82% *v* 52%) [8]. Renal radio nucleotide scans, being associated with less radiation exposure than routine X-ray films, have been used to determine function of the contra lateral kidney and intrinsic activity. They do, however, pose additional risks to the fetus from the passage of radiopharmaceuticals and contrast agents across the placenta. As an alternative, Doppler assessment of the contra lateral kidney may be employed. The small numbers of reported cases of renal cell carcinoma in pregnancy allow few conclusions to be drawn regarding the outcomes of each. However, avoidance of disruption of the peritoneal cavity in the extra peritoneal approach may theoretically be associated with less uterine irritation and in turn fewer obstetric complications, including preterm labour. If a tumoral kidney mass is diagnosed in the second trimester then it is reasonable to wait until fetal viability before proceeding to surgery [9].

Conclusions

1. The hypertension, especially during the third trimester, is often induced by pregnancy and related to pre-eclampsia. This means that renal cell carcinoma may not be considered as a potential cause for such symptoms, thus leading to delay in diagnosis and treatment.
2. The plasma renin level must be performed as a screening test in young pregnant patients, because the blood pressure, as a real cancer marker can draw the attention upon a renal cell tumour diagnosis, not being interpreted only as high blood pressure

in the pregnancy context as possible preeclampsia-eclampsia imminence.

3. The monitoring of the plasma renin in young pregnant patients is necessary in order to exclude a possible nephroblastome because this situation is not as rare as we believe. The percent of pregnant women with kidney tumor in same time is reported in medical literature 0.1% as which means that 2-3 pregnant women should present with it every year but in my medical practice in the last year I found 8 clinical cases in this situation. If we detect an increased level of plasma renin in serum we can suspect kidney cancer at hypertensive pregnant without any irradiation methods (abdominal CT, MRI, UIV) total contraindicated in pregnancy.

4. We must to investigate with serious attitude in our medical practice, the hypertensive pregnant patients also in the direction of secondary hypertension and we have possibility to found unexpected others causes of high blood pressure, like in the clinical case presented.

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