

Minimal invasive treatment options in pregnant women with ovarian vein syndrome

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Abstract

Purpose To describe the treatment modalities of symptomatic ovarian vein syndrome in pregnancy.

Methods In our study, we included 12 pregnant women with right ureter and kidney dilatation; caused by ureteric obstruction. In 11 out of 12, we insert a DJ stent and in one woman we applied percutaneous nephrostomy, because of intermittent abdominal pain, resistant on analgetic therapy or feverish pyelonephritis. DJ stents and nephrostomy were inserted under ultrasound guidance without anaesthesia.

Results After insertion of DJ stents, respective percutaneous nephrostomy colic attacks went back immediately and the feverish pyelonephritis in few days. At no time during these procedures, there was a risk for pregnancy.

Conclusion Ovarian vein syndrome in pregnancy can lead to violent colic pain and can become complicated by accompanied pyelonephritis. In these cases insertion of a DJ stent or percutaneous nephrostomy under ultrasound guidance is possible and safe, and leads to an improvement of complaints immediately.

Keywords Vena ovarica · Ovarian vein syndrome · Ureteric dilatation · DJ stent · Nephrostomy · Pregnancy

Introduction

Vena ovarica syndrome is defined as a ureteric compression by vena ovarica in pregnancy, which can potentially lead to ureteric and kidney dilatation, intermittent flank pain, and perhaps to feverish pyelonephritis, occurring with most frequency on the right side, mostly in the third trimenon of the pregnancy.

The cause of this syndrome is not clear. Different mechanisms are discussed for example, a blood congestion of the vena ovarica, which compresses the ureter, congenital malposition of the ovarian vein, unilateral ptosis of the kidney or hormonal factors [1–3].

Because of the pregnancy, diagnosis can be made or supposed only ultra soundly. In unclear cases, magnetic resonance tomography can be also performed.

Since Clark [4], who published a series of 129 cases of right-sided ovarian vein syndrome, several other studies have published case reports or small series of maximal eight cases [4–10]. No study included exclusive pregnant women and no study described treatment modalities during pregnancy.

We report treatment of 12 pregnant women, who were referred by department of gynaecology and obstetrics, because of right-sided colic pains, resistant on analgetic therapy or because of feverish pyelonephritis.

Materials and methods

Twelve pregnant women, 19–32 years old, in 24–36 weeks of gestation were suggested by department of gynaecology and obstetrics because of right sided intermittent abdominal pain, resistant on analgetic therapy (8 women) or right sided feverish pyelonephritis (temperature > 39°C) (4 women),

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caused by right ureteric obstruction. None of them had history of urolithiasis and none of them had kidney dilatation during the first trimester of pregnancy examined by gynaecologist with ultrasound in the course of routine pregnancy monitoring. seven women were multiparous and five uniparous.

In all the patients, the premature contractions were excluded from the gynaecological department.

We inserted DJ stent in 11 women under ultrasound guidance. In one woman with kidney dilatation and fever we applied percutaneous nephrostomy, because it was impossible for unknown reasons to push forward the DJ stent. For procedures anaesthesia was not necessary. In patients with resistant colics and who get DJ-stent, we also inserted Folley catheter for 1 day. In women with pyelonephritis Folley catheter remains until they became fever free.

In one patient who get percutaneous nephrostomy no Folley catheter insertion was necessary.

After the procedures, the patients remained in the department of gynaecology and obstetrics for pregnancy monitoring 1–2 days in case of colic or until they became fever free in case of pyelonephritis (average 4 days). There was no risk to any of the pregnancies during the performed procedures.

Discussion

The ovarian vein syndrome was first reported by Clark 1964 [4], but its pathophysiological entity remains still controversial. Clark postulated that an aberrant ovarian vein uses increased pressure of the ureter due to blood congestion during pregnancy. Alternatively, gravid uterus may also cause ovarian vein dilatation. However, significantly elevated venous pressures are needed for ureteral occlusion. But such pressures are not achieved, even during pregnancy [11].

Hodgkinson [12] demonstrated that, although blood flow in the vena ovarica increases during pregnancy by 60-fold and venous diameter by threefold, analogous rise of venous pressure is not measured. Southwell [13] reproduced experimental ovarian vein dilatation by the ligature of other main veins but this resulted no in ureteral obstruction.

Hormonal changes associated with pregnancy are also discussed as a possible cause of the ovarian syndrome. The authors postulate that altered levels of circulating oestrogen and progesterone could decrease the tone of vascular wall, what leads to the mentioned increase of venous diameter [14, 15]. But, why then more frequently on the right side?

This might be explained by its proximity to the iliac vessels and the course of the right ovarian vein. Right ovarian vein usually drains directly into the inferior vena cava [11]. Aberrant veins draining into the right renal vein could be

also responsible for the urethra compression in the course of vena ovarica dextra syndrome [4, 10].

Whatever is the actual cause of ureteral obstruction, kidney dilatation leads to colic attacks and sometime to feverish pyelonephritis.

Normally, colic attacks can be controlled with spasmolytic drugs. In the cases, however, of therapy resistant colic attacks interventional measures become necessary. In pregnant women with feverish pyelonephritis, an antibiotic therapy should be initially started. But in the case of high fever persistence invasive measures such as DJ stent or nephrostomy insertion are necessary.

After DJ-stent insertion, colic attacks stop immediately. The stent leads to drainage and discharge of the kidney. In the case of accompanied feverish pyelonephritis, a Folley catheter must be inserted additionally and the antibiotic therapy must be continued until the pregnant woman becomes fever free. Insertion of Folley bladder catheter is necessary to avoid commuting of infected urine through the DJ-stent like a jojo toy.

In the cases of feverish pyelonephritis, in which for different reasons DJ stent cannot be inserted, we prefer to apply nephrostomy catheter percutaneously. In these cases, a simultaneous Folley catheter insertion is not necessary. Nephrostomy and DJ-stent insertion take place only under simultaneous ultrasound check. For nephrostomy application pregnant women must be put on prone position. For assistance we use a floating tire. DJ stent and nephrostomy remain until delivery. Few days after childbirth both are removed. Before it we take an X-ray picture of abdomen to exclude other possible reasons for the kidney obstruction (e.g. ureteral stones). Ureteral calculi can also lead to kidney obstruction, colic attack and pyelonephritis during pregnancy. For all women we have treated in this way, there was no jeopardy in any time of pregnancy. An acceleration of childbirth was not necessary.

Conflict of interest None.

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