Single umbilical artery occlusion in a 3VC with Sonar evidence of bladder outflow obstruction

3 Cases

Conspiracy ?
Coincidence ?
or
Complication

Case 1

- Kalafong Hospital

- Mrs V 23y Primigravida
- Referred to FMU at 17+3 weeks with ultrasound findings of large megacystis, oligohydramnios ,bilateral normal renal parenchymal appearance
- Counseled by colleague about findings, vesicocentesis performed with the view to a shunt
- Folllow up visit 21+3 fetus above + ascites and anhydramnios patient counseled about the technical difficulties relating to shunting; pregnancy management options discussed and karyotyping offered
- fetus karyotyped – 46xy, patients opted to continue the pregnancy

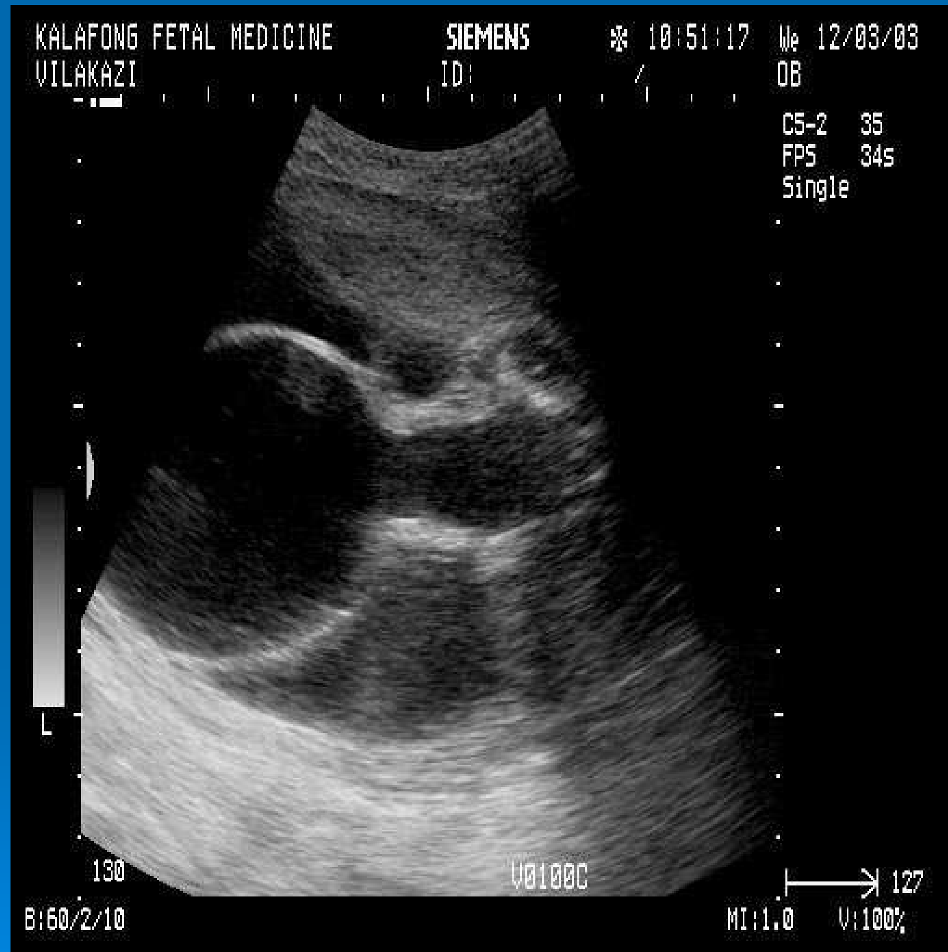
Case 1

- 24 weeks personally started scanning and 2 weekly f/up
- Olighyhydramnios
- Cord 1 occluded artery, one patent, vein normal
- Ascites, pericardial effusion (both resolved by 28 weeks?!)
- Thick walled "floppy" bladder
- Bilateral echogenic kidneys with cystic cortical changes
- Moderate hydronephrosis
- Male fetus normal appearance of genitalia

Case 2

- Outcome:
- DOD 17 May 2003 35weeks PAH
- Male 2520g CS
- Clinically Prune Belly Syndrome
- Bladder and L kidney outflow obstruction
- Patent Urachus
- Nefrostomy performed
- R.I.P 23 May 2003 renal failure
- No PM done

Case 1



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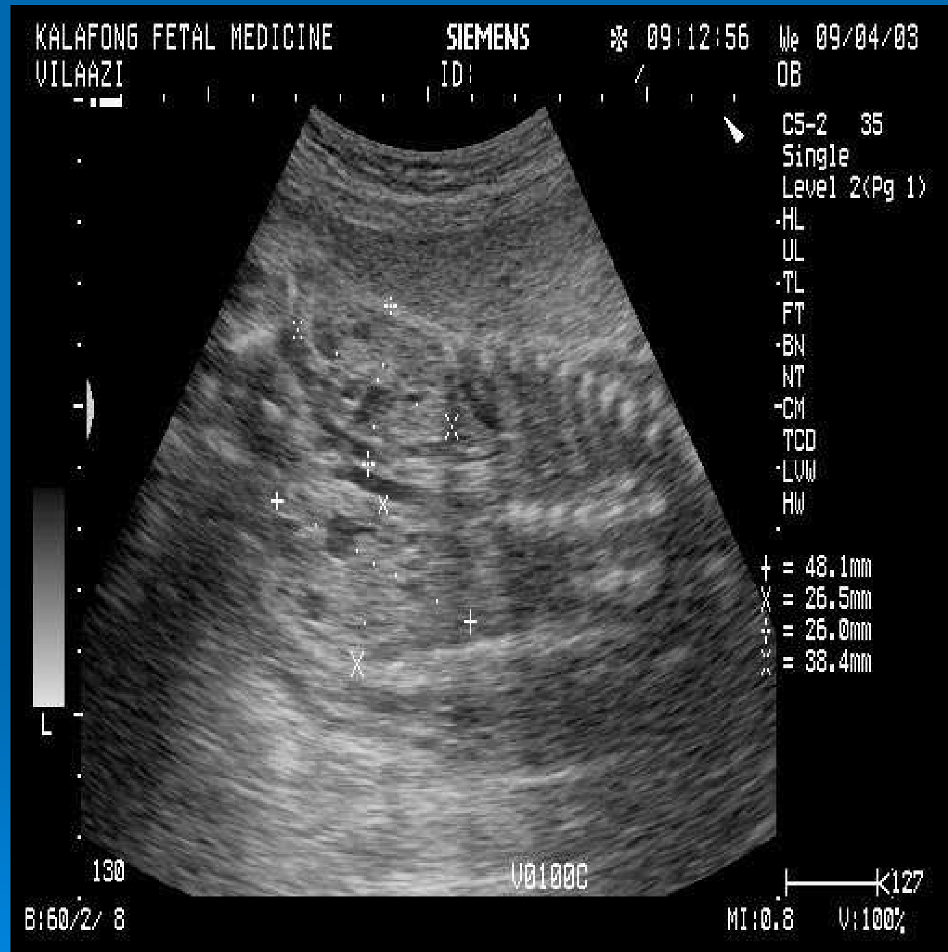
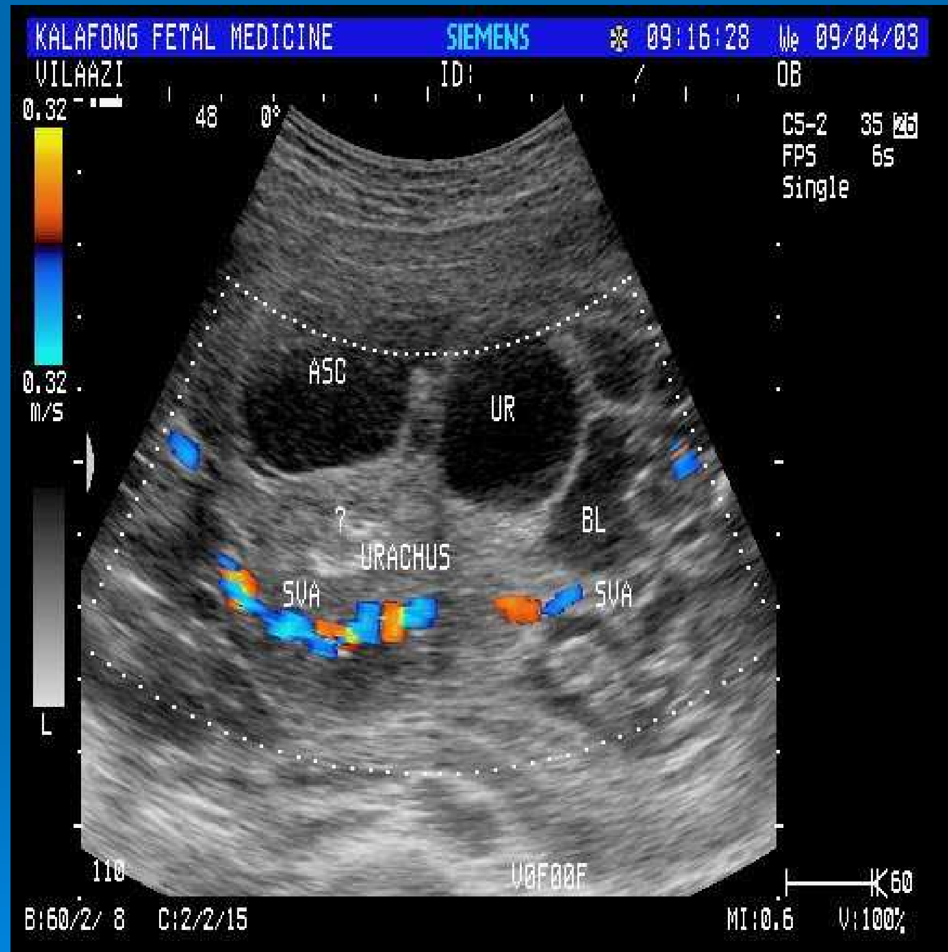


KALAFONG FETAL MEDICINE SIEMENS 09:21:50 We 09/04/03
VILAAZI ID: / OB
C5-2 35
FPS 34s
Single
CORD
L
80
V0100K
127
B:66/2/ 3
MI:0.8 V:100%

Case 1



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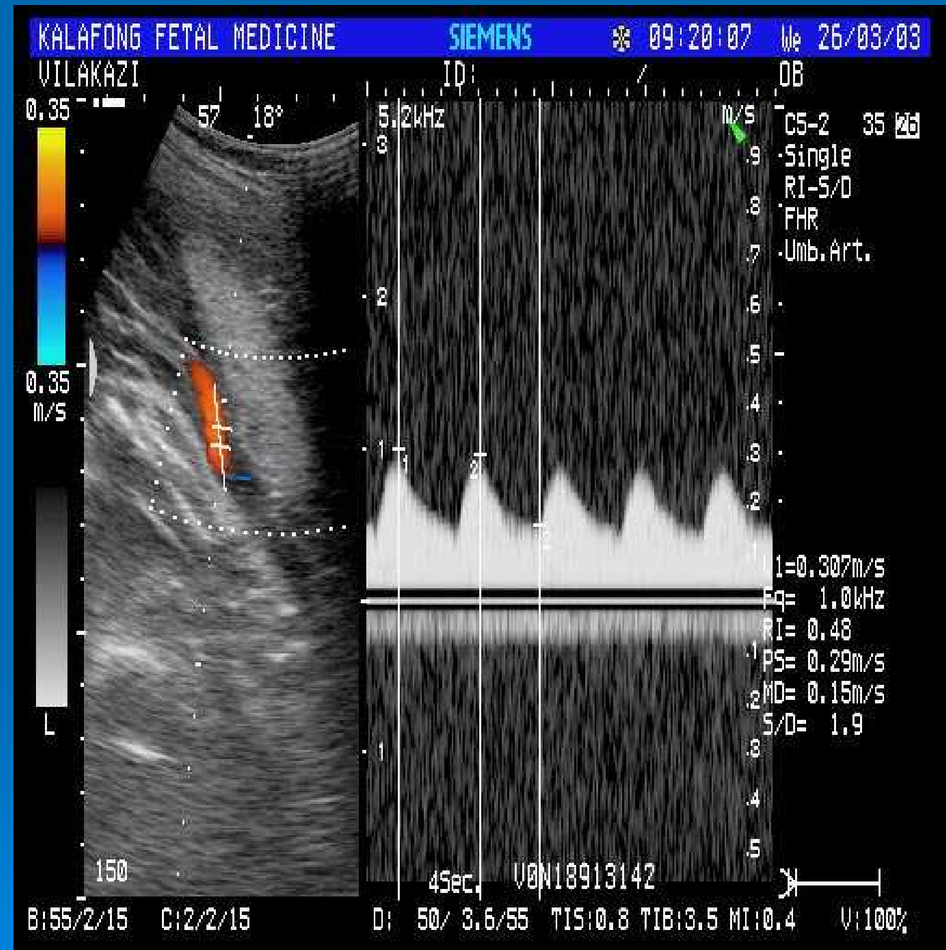

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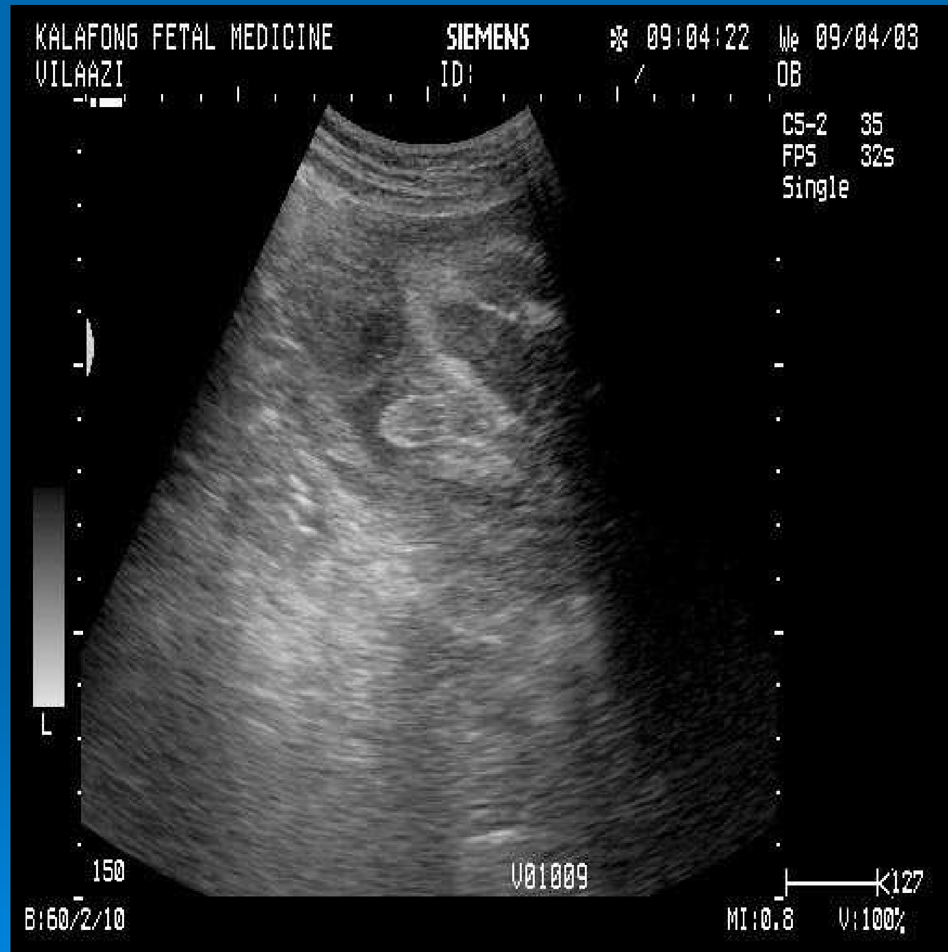


Case 2

- Coronation Hospital

- Mrs P 22y G2 P0 E1
- Referred from Klerksdorp (Potch Hospital patient) at 21+2 weeks LMP
- Sonar 24 weeks
- Oligohydramnios
- Ascites
- Bilateral echogenic renal cortexes moderate renal pelvic dilatation
- Dilated L ureter 15 x 20 x 37mm
- Thick edematous cord 1 occluded 1 patent artery, normal vein
- Hypertrophic myocardium small L pericardial effusion

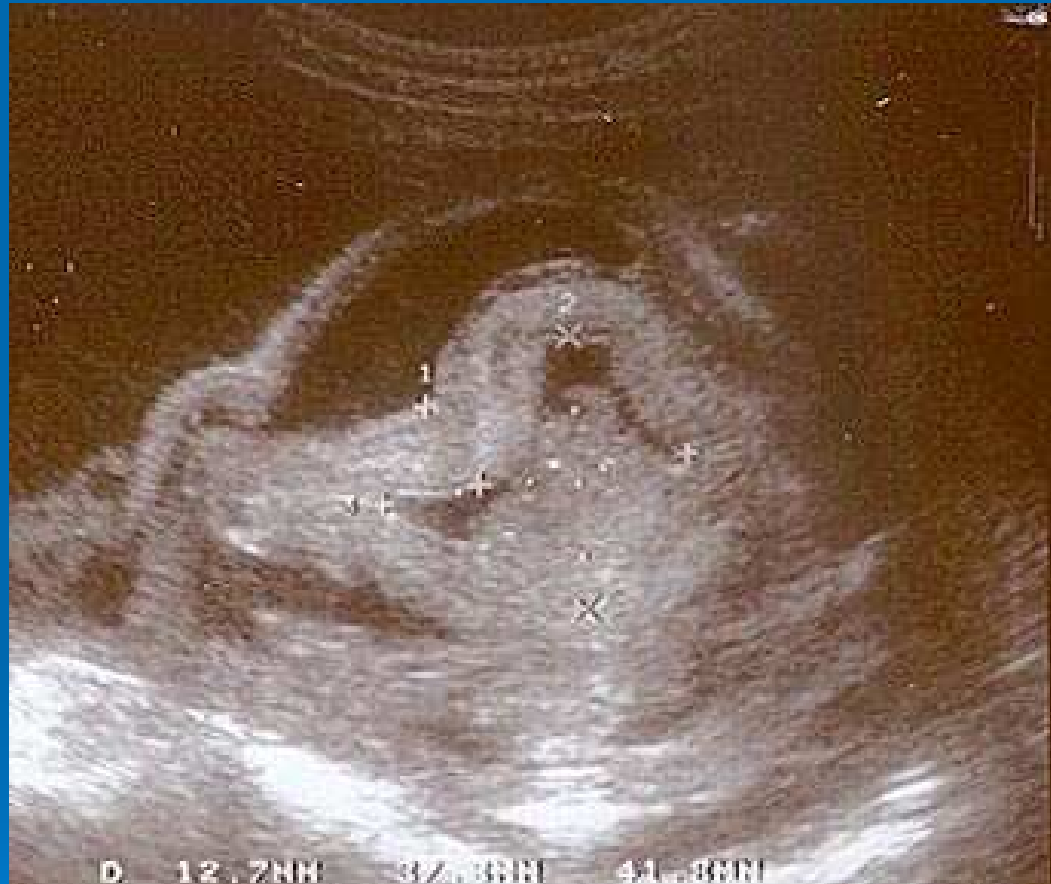
Case 2

- Male fetus on scan
- Patient counseled and offered karyotpying
- Patient declined this
- Referred back to her hospital for further management

Case 2

- Outcome: Telephone to Potch + from Patient
- Patient: Counseled by own hospital about poor prognosis and offered TOP never returned to Potch
- IUD
- DOD 4.4.3 26 weeks after IOL Sybrand Van Niekerk
- Distended soft abdomen

Case 2



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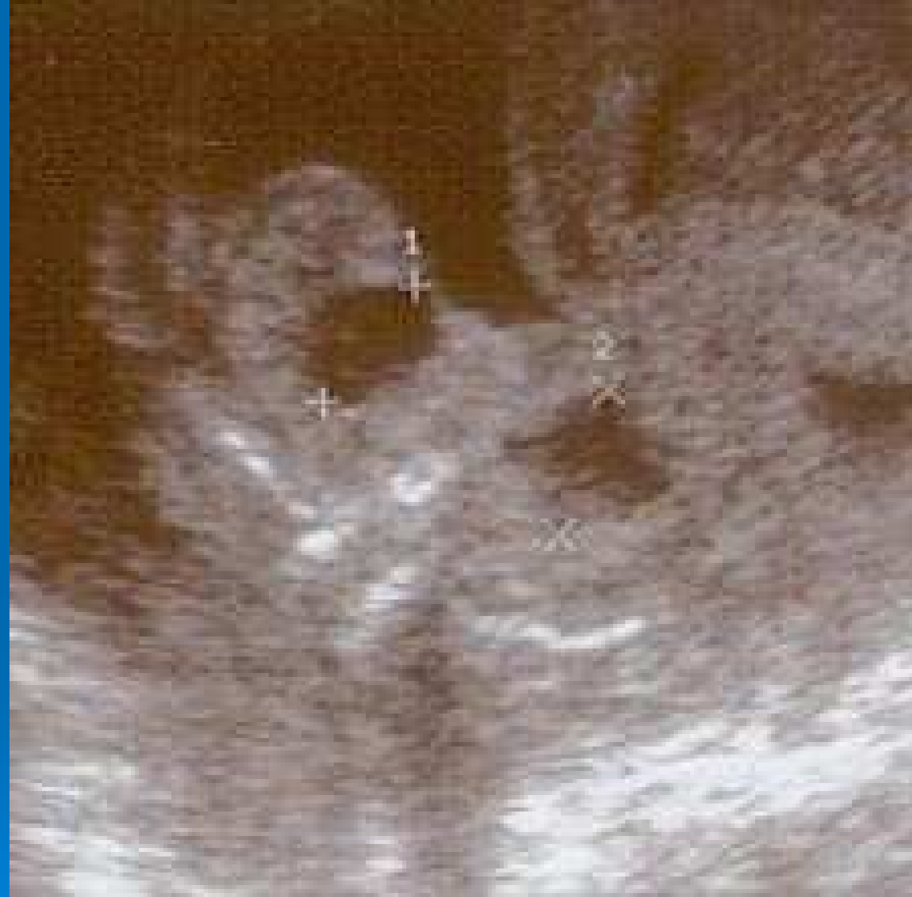

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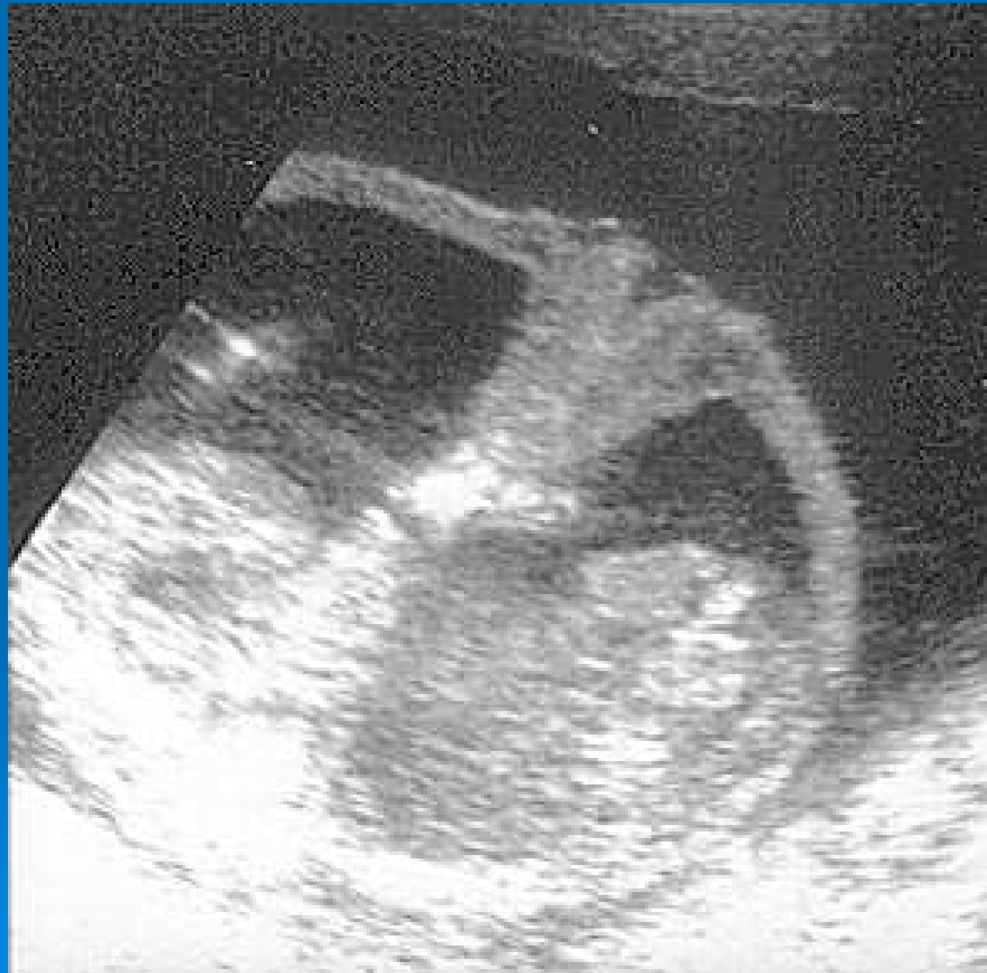

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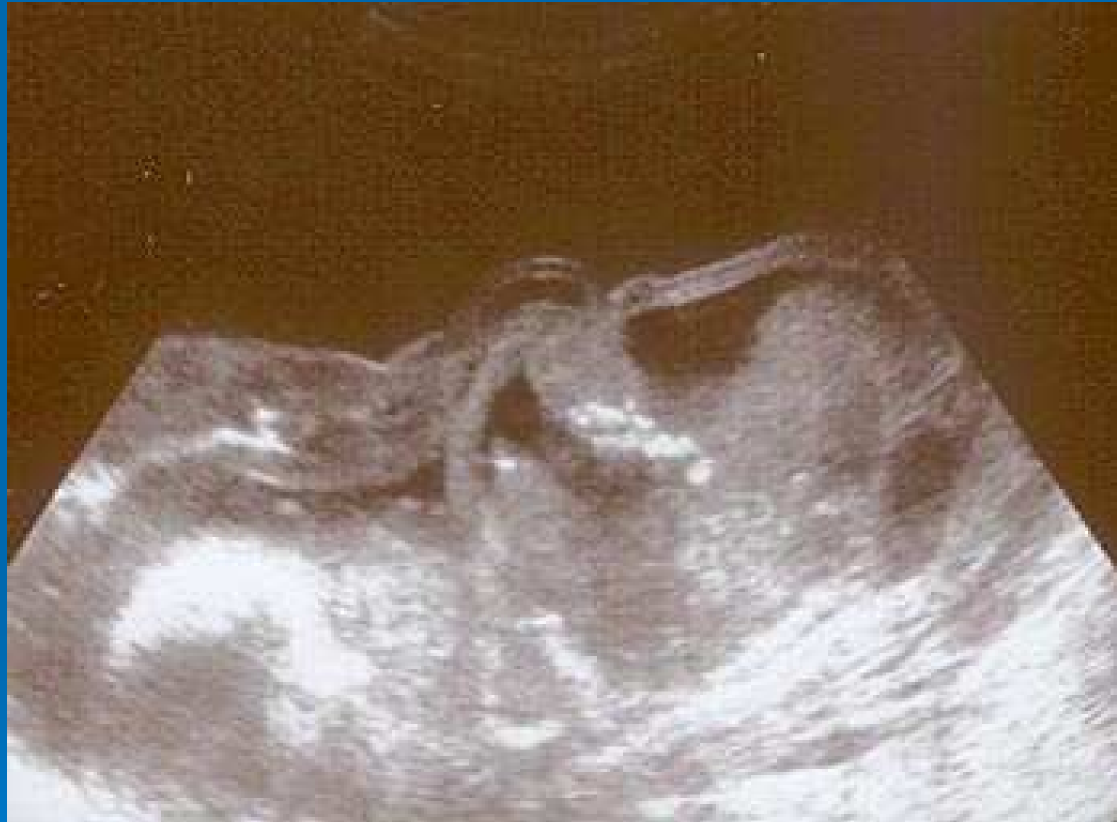

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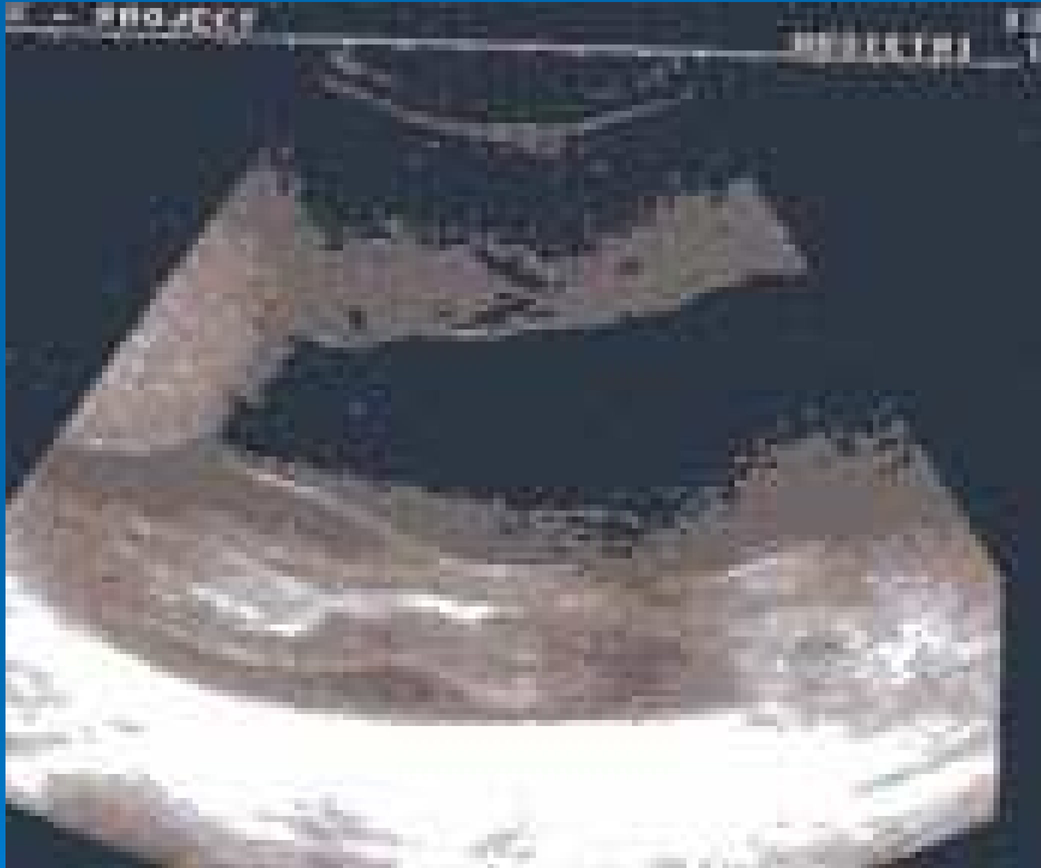


Case 3

- Johannesburg Hospital

- Mrs A 25y Primigravida
- Referred to high risk sonar clinic at 19 w sonar ultrasound following oddly shaped large bladder and echogenic intra cardiac focus found on routine sonar

Case 3

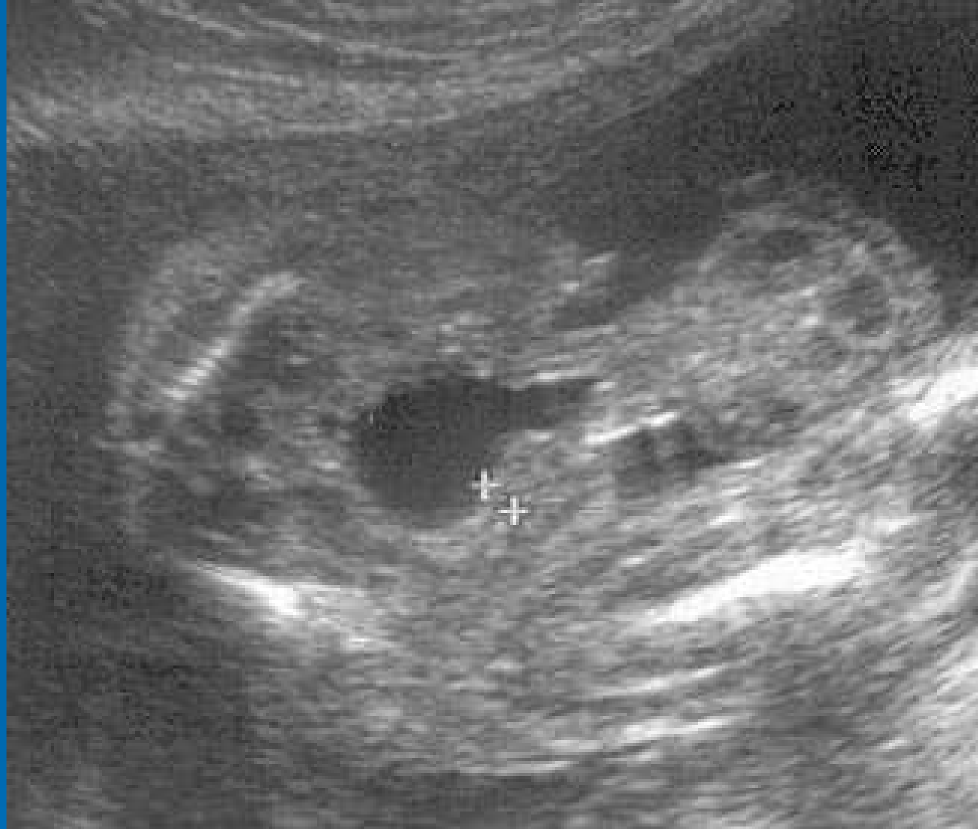
- Normal liquor
- Cord 1 occluded artery, one patent, vein normal
- Bladder with keyhole appearance not dilated, 3.8mm thick wall
- Normal kidneys
- Male fetus with abnormal appearance of genitalia
- Intracardiac echogenic focus

- Patient counseled and offered karyotyping, declined

Case 3

- Outcome:
- IUD on scan 13 May 2003 at 28 weeks patient counseled about the option of PM
- Failed IOL patient, opted to avoid hysterotomy, but never returned for reassessment.
- Lost to follow up

Case 3



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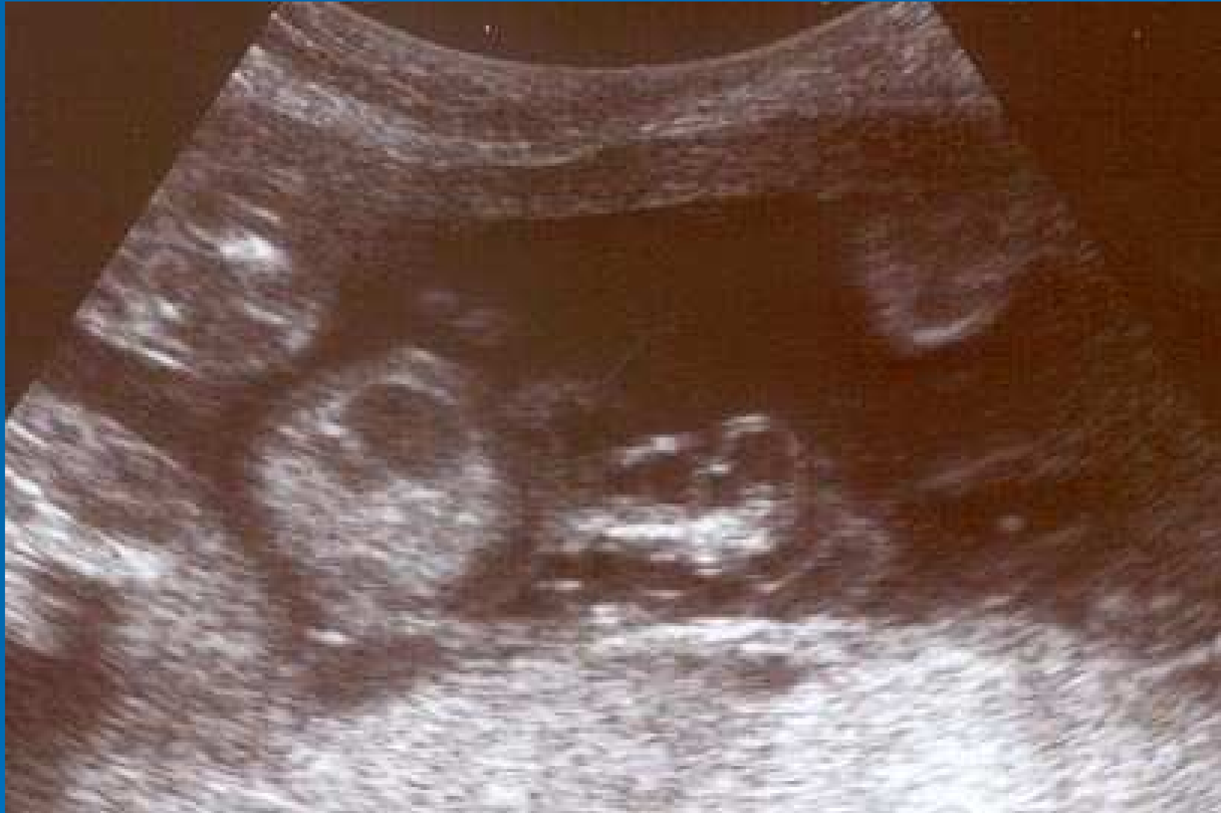

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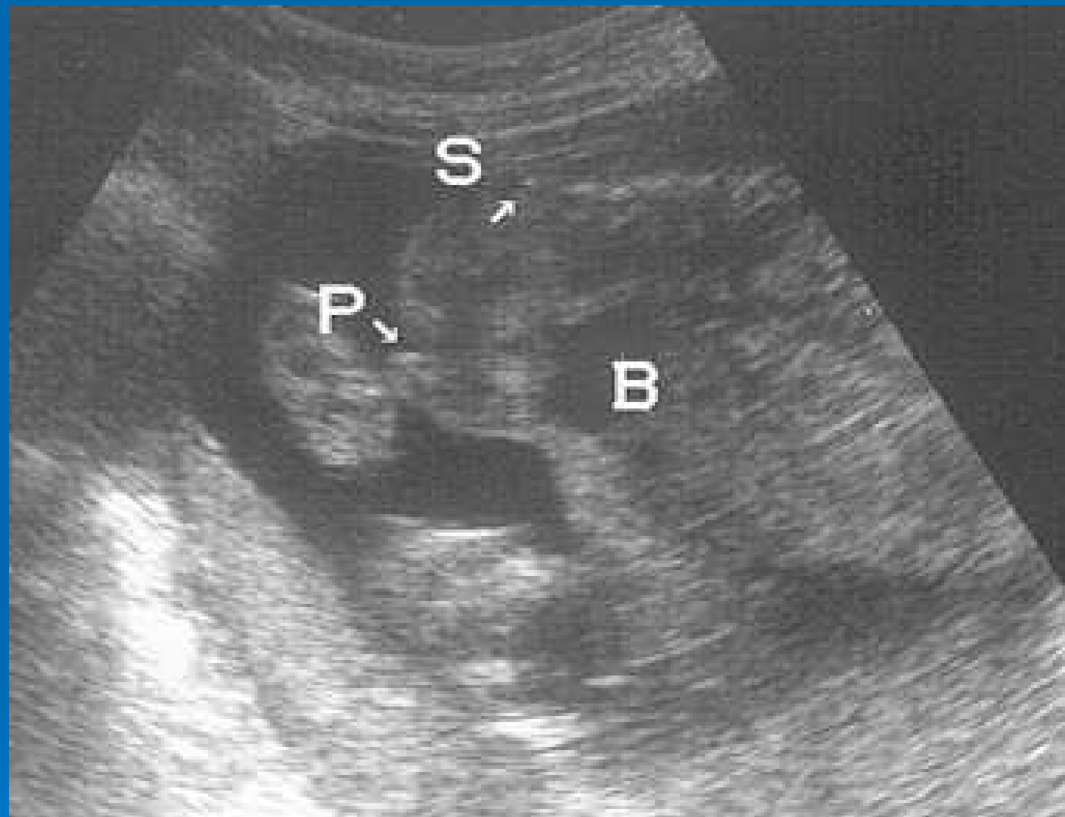

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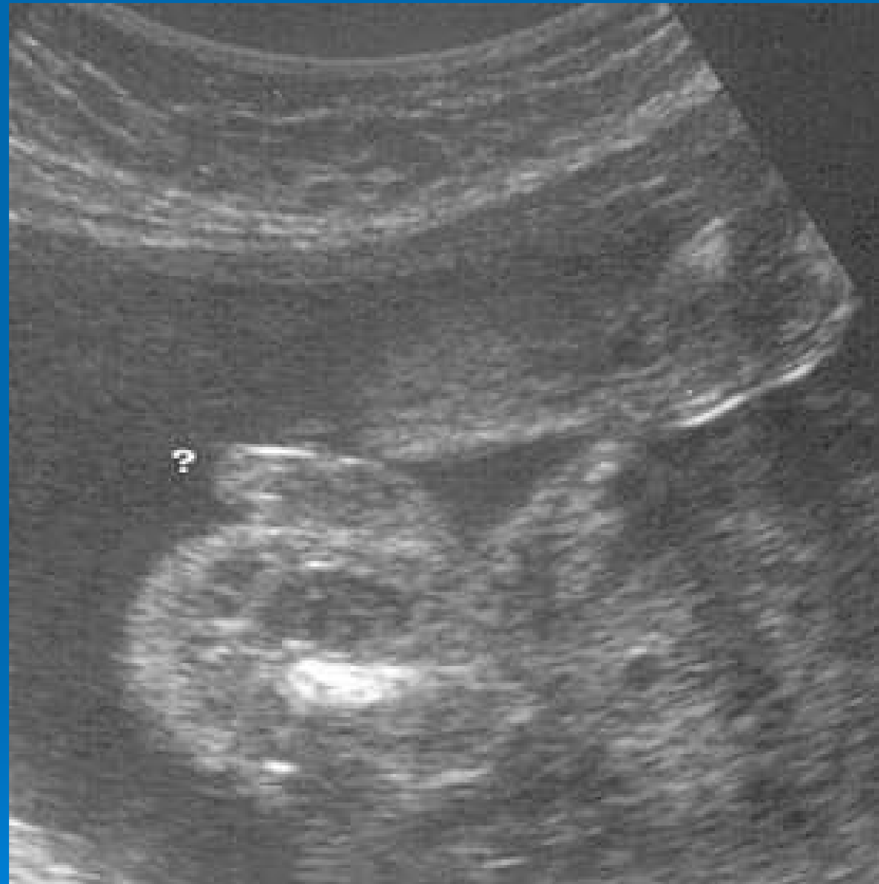

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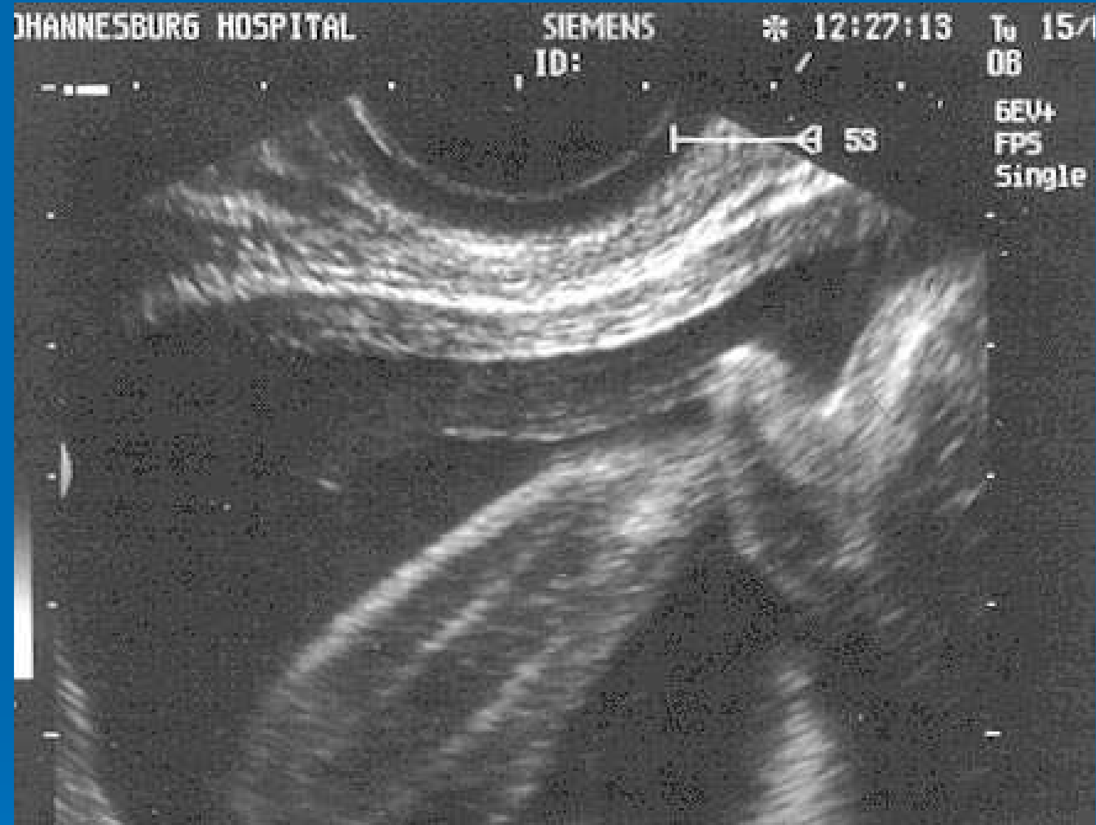

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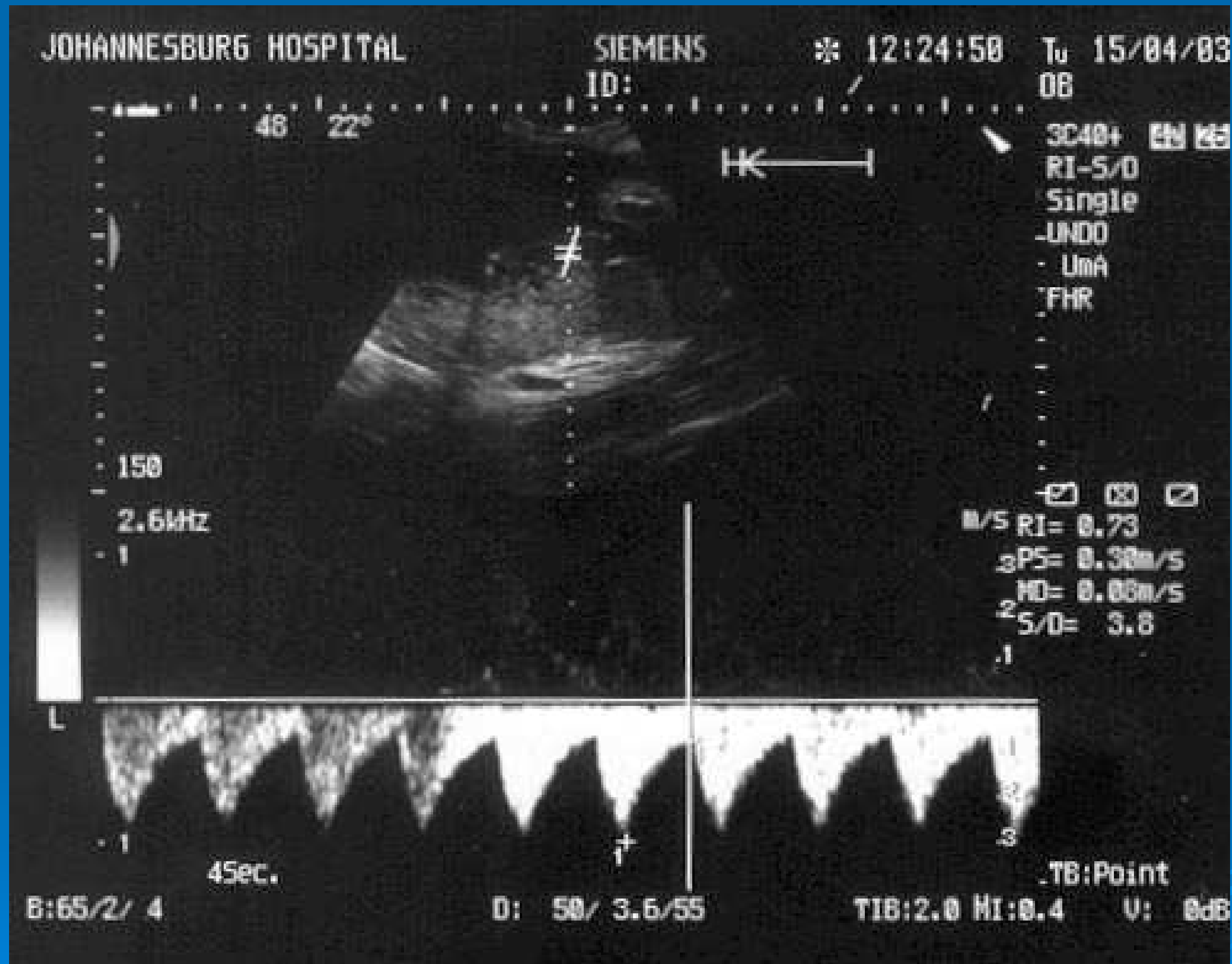

PUV

- Most common cause of bladder outlet obstruction in male fetus
- Sporadic 1/3000
- Causes of Subvesical bladder obstruction:
  - Urethral agenesis
  - Persistent cloaca
  - Urethral stricture
  - PUV

PUV

- Epidemiology is undetermined
- Sporadic, rare, males
- Obstruction of urinary flow leads to detrussor hypertrophy and gradual enlargement of the bladder
- This eventually leads to reflux with mega ureter and hydronephrosis often one kidney >> than other (sonar – unilateral pathology)
- Ascites – transudation/bladder rupture
- Pulmonary hypoplasia

PUV

- isolated or
- associated with
- Chromosomal anomalies (20%)
  - T18,T13,Del 2q and 69XXY
- Other genitourinary anomalies (20 – 25%)
  - Urethral duplication,cryptorchidism, hypospadias

PUV

- Other anomalies
  - PDA
  - Total anomalous pulmonary venous drainage
  - Microstenosis
  - Tracheal hypoplasia
  - Scoliosis
  - Imperforate anus

PUV

- Sonar:
- Bladder:
  - keyhole shaped, thick walled large
- Kidneys
  - Hydronephrosis PUV
  - Cortical changes
- Uni/ Bilateral mega ureter
- Liquor volume
  - normal – anhydramnios
- Fetal sex:
  - male = puv

PUV

- Poor prognositc factors
  - Anhydramnios /oligohydramnios
  - Bilateral cystic renal cortexes, severe hydronephrosis = suggestive of renal dysplasia
  - High fetal urine sodium & calcium & β microglobulin
- Management:
  - Detailed sonar
  - Karyotype
  - VA draining ** early of benefit
  - Serial scanning for liquor volume

PUV

- Resources:

- Urological Disease in the fetus and infant Diagnosis and Management DFM Thomas
- Diagnosis of fetal abnormalities The 18 – 23 week scan Pilu,Nicolaides
- Prenatal diagnosis of prune belly syndrome at 12 weeks of pregnancy :case report and review of literature
  - T Hoshino et al; Ultrasound in Obstetrics and Gynecology;Volume 12 no 5 November 1998 362 - 365
- Prenatal diagnosis of urinary ascites
  - D.Bettelheim et al; Ultrasound in Obstetrics and Gynecology;Volume 16 no 5 October 2000473-475