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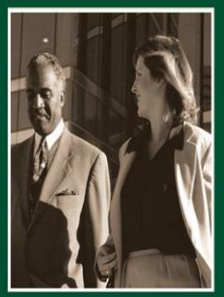


Case presentation

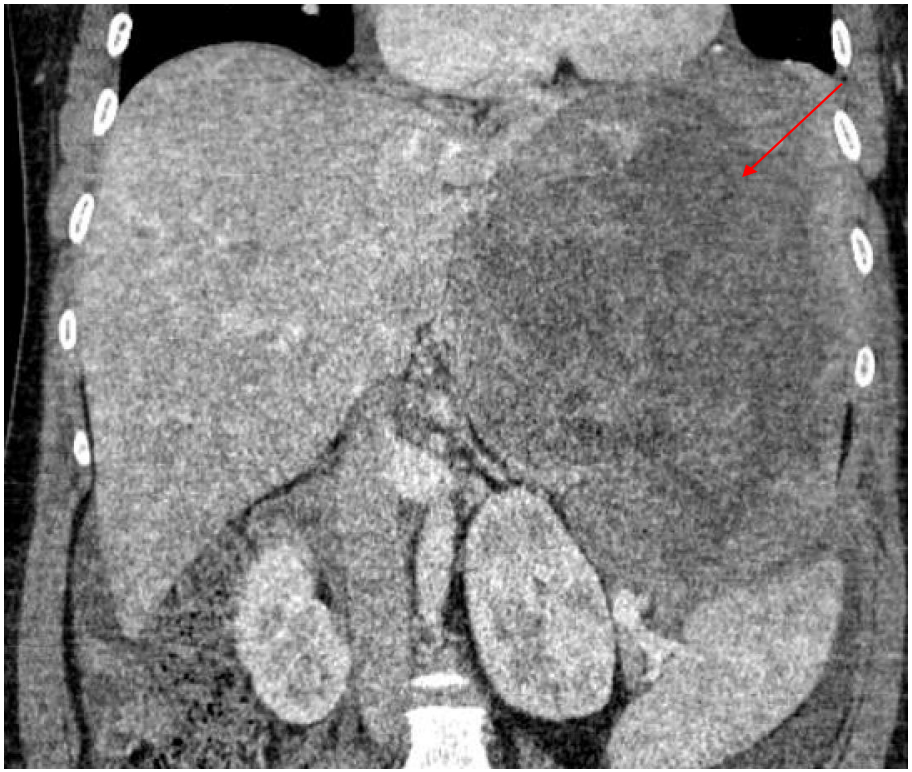
Vaia Florou, MD
Hematology/Oncology Fellow

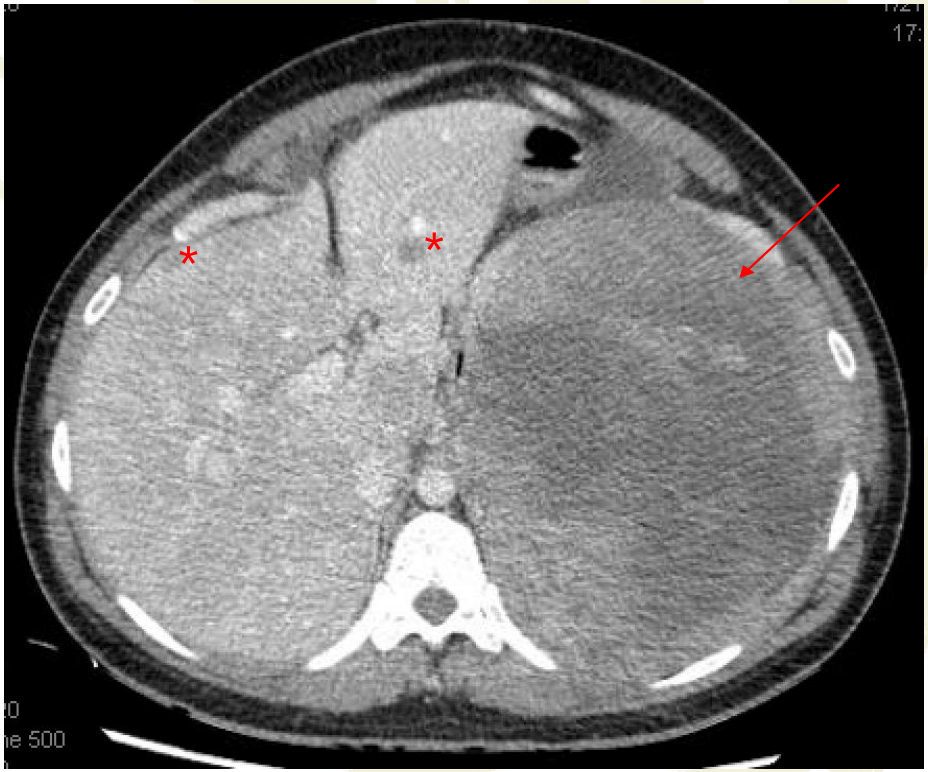
Case Presentation

- 32 year old woman with no medical problems
- She was 21 weeks pregnant when she presented to a community hospital with left sided abdominal pain and cough for about one month
- Symptoms started when she was 16 weeks pregnant
- Initial ultrasound showed a suspicious mass at the stomach

Florou et al, AJHO, 2017

Case Presentation- Imaging at presentation





CT of the abdomen and pelvis: 21.4 x 11.1 x 16.3 cm gastric mass invading the spleen as well as multiple liver lesions

Florou et al, AJHO, 2017

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Case Presentation

- Due to worsening symptoms she underwent an exploratory laparotomy with partial gastrectomy and splenectomy with resection of the tumor

- During surgery there was tumor capsule rupture and it was a piecemeal resection

- She also had biopsy of the liver lesions

Florou et al, AJHO, 2017

Case Presentation

- Pathology
  - Gastric mass (24cm)
    - **Gastrointestinal stromal tumor**, 37 mitoses/ 50 HPF
    - 30% necrosis, 70% viable
    - Mutational status- KIT exon 11 mutation
  - Liver biopsy
    - Gastrointestinal stromal tumor

Florou et al, AJHO, 2017

Case Presentation- Management

- Due to surgical complications she was transferred to our center for further management of her condition

- We checked circulating tumor DNA at the time and we detected the presence of the same KIT exon 11 mutation, W557-K558 deletion

Florou et al, AJHO, 2017

Circulating tumor DNA before treatment

- ***KIT*** W557_K558del (Exon 11 Deletion)
- ***TSC1*** R509*

KIT exon 11 mutation W557_K558del was detected in 6.3% of total circulating DNA

Florou et al, AJHO, 2017

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Case Presentation- Management

- Due to high tumor proliferation rate in tumors with KIT exon 11 mutation, codon W557- K558 deletion we initiated Imatinib during her **26th** week of gestation
- We initiated Gleevec at 100mg daily escalated every four days to 400mg daily
- Required one day off Imatinib for increased liver enzymes one week into the 400mg dose
- Good tolerance overall

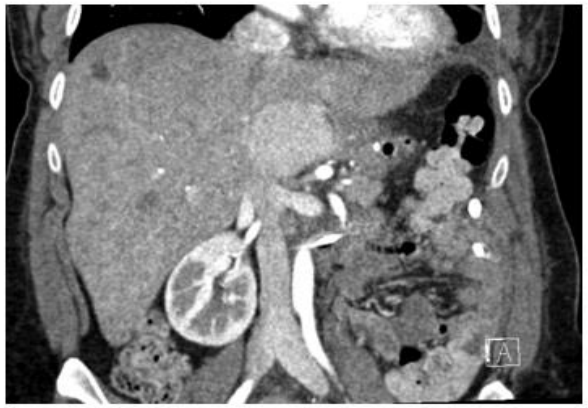
Florou et al, AJHO, 2017
Florou et al, Future Oncol, 2017

Case Presentation

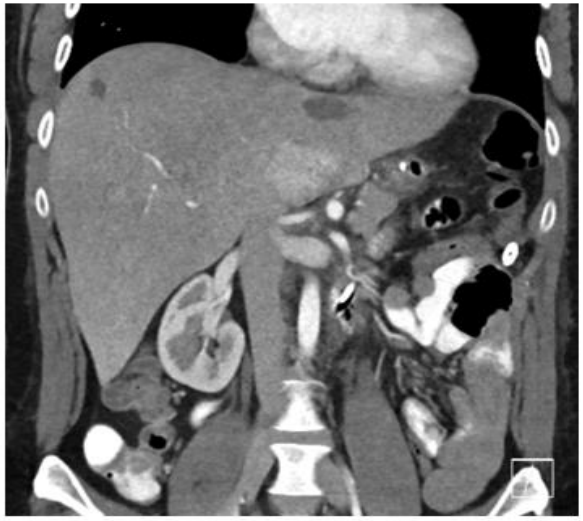
- At 29 weeks of gestation she experienced premature labor and Imatinib was held for planned C-section
- Uncomplicated c- section at 30 weeks of gestation
- Imatinib was restarted 6 days post partum
- Preterm baby boy discharged from the neonatal intensive care unit in stable health two months later
- Ongoing response to Imatinib one year later

Florou et al, AJHO, 2017

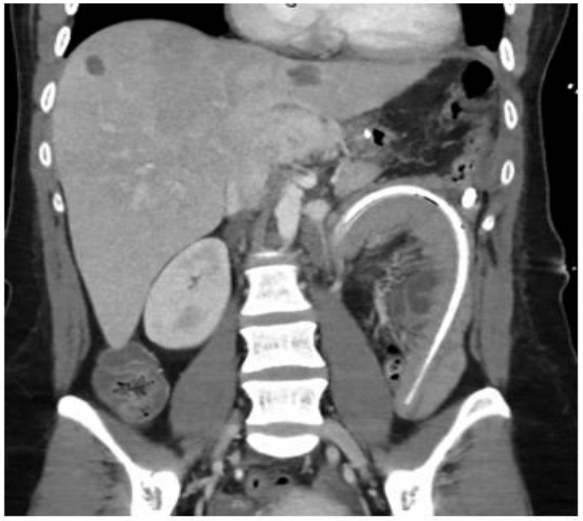
Response of the liver lesions over time



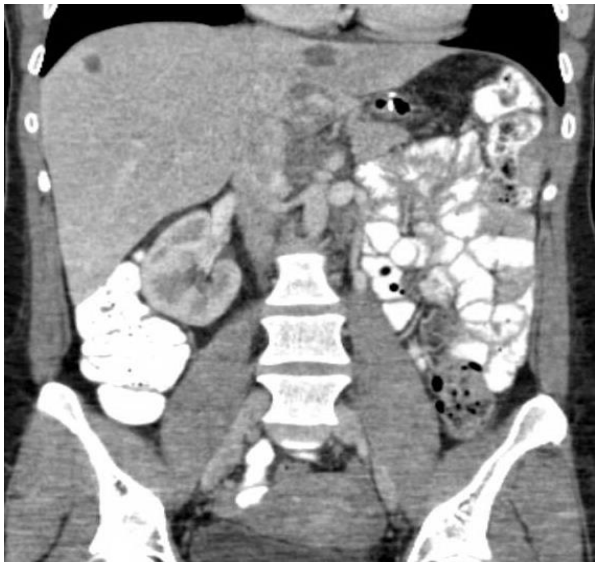
Immediately after the C-section



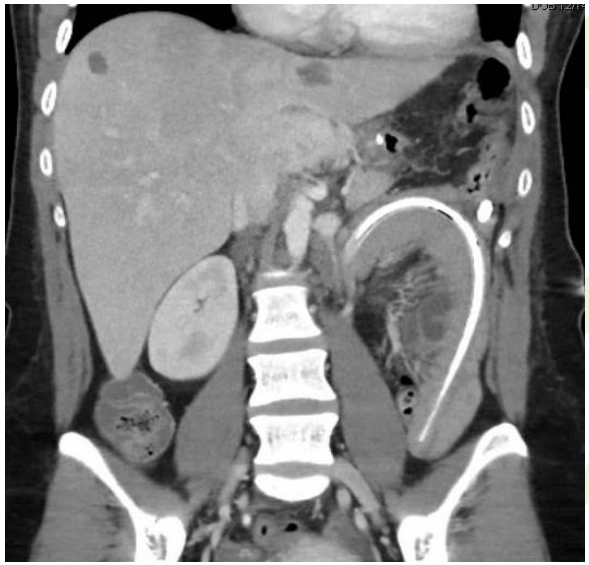
Two months later



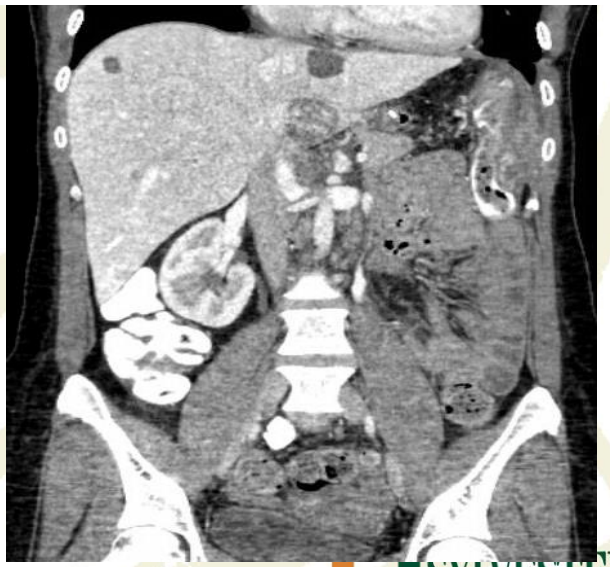
Three months later



Six months later



Nine months later



Twelve months later

Florou et al, AJHO, 2017

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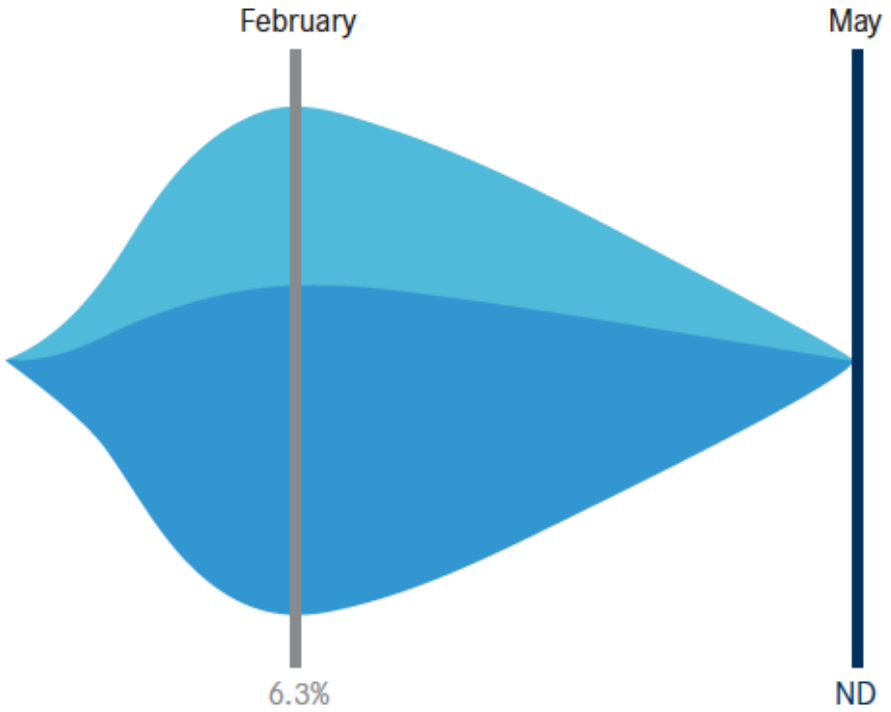
Circulating tumor DNA three months after therapy



Decrease of c-KIT Exon 11 mutation from 6.3% of Total Circulating Tumor DNA to nondetectable three months after starting Imatinib

Florou et al, AJHO, 2017

Conclusions

- Cases of GIST in pregnancy have only been scarcely reported
- Surgical excision if feasible during pregnancy and TKIs postpartum is the most described approach in published cases
- However, insufficient evidence to conclude that Imatinib can cause fatal developmental effects especially if exposure occurs after the first trimester

Valente et al, Gynecol Oncol, 1996
Scherjon, Case Rep Med, 2009
Zarkavelis et al, Clin Transl Oncol, 2015
Florou et al, J Clin Oncol, 2018

Conclusions

- Different KIT mutations have different risk potentials
- Initiation of TKI therapy in pregnancy should be individualized
- Women who want to become pregnant should have a discussion with their oncologist first about all the potential risks and possible options
- Circulating tumor DNA may become a surrogate marker of response in the future, especially in situations like pregnancy when exposure to radiation from CT and PET should be limited

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Florou et al, J Clin Oncol, 2018

Thank you

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