

1. BACKGROUND

- Anti-N-methyl-D-aspartate receptor encephalitis is a neurologic disease described for the first time by Vitalini et al. in 2005 [1].
- The most common tumour associated with this disease is an ovarian teratoma in women.
- Autoantibodies produced against NMDA receptor, present in neurological tissue, found in teratoma, cross-react with NMDA receptors located in the central nervous system [2].
- Distinguishing the disease from a primary psychiatric disorder is challenging and the severity of symptoms often requires intensive care.



Figure.1
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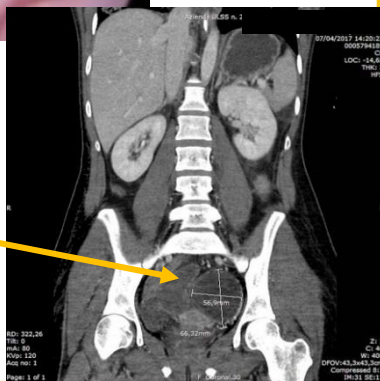


Figure.2:
CT Scan of
ovarian
cyst

2. CASE

- A 24-year-old woman presented to A&E with h/o headaches for two weeks; confusion; hallucinations; and considerable personality change, over a space of one day. She was disoriented (to time, place, person) and confused, so, was referred to psychiatric liaison team. She was incidentally found to be 7-weeks pregnant at presentation.
- Shortly after admission, she became unconscious, needed intubation and was transferred to ITU. She was diagnosed with encephalitis after neurological assessment and lumbar puncture.
- Patient was already known to Gynaecology outpatients due to a diagnosis of right ovarian dermoid cyst 55x33x45 mm.
- Test were sent for NMDA receptor antibodies (due to presence of teratoma) in blood and CSF, and they both came back as positive with very high titres.
- Based on these results, an urgent laparoscopic ovarian cystectomy was done. Histopathology confirmed high grade teratoma.
- Despite this, patient failed to improve and needed tracheostomy.
- Termination of pregnancy was done at 16 weeks' gestation in her best interest and to facilitate recovery and resuscitation. Following this, she initially made a steady progress but then deteriorated again.
- She received a range of treatments including IV methyl prednisolone, oral steroids, IV immunoglobulins, rituximab, plasma exchange and cyclophosphamide. Her antibodies continued to persist, so right oophorectomy was done with the possibility of removing any residual microscopic tumour.
- Patient recovered slowly and as encephalitis resolved, she continued to experience psychiatric manifestations. She was transferred to neuro- psychiatric unit for rehabilitation and psychological recovery. She was safely discharged after almost 8 months and she is currently asymptomatic after three years.

3. DISCUSSION

- NMDA receptors have crucial roles in synaptic transmission and plasticity [3]. Overactivity of NMDA receptors is a proposed underlying mechanism for epilepsy, dementia, and stroke, whereas low activity produces symptoms of schizophrenia.
- Symptoms are usually change in behaviour, memory deficit, speech disorder, loss of consciousness, movement disorder and seizures.
- Despite the severity of the symptoms, aggressive immunotherapy and tumour removal usually result in favourable long-term outcomes.
- Recovery is slow and typically the most severe symptoms resolve first while the cognitive, behavioural, and memory problems take longer to resolve. Most patients will make a full

4. CONCLUSION

1. Always think of auto immune encephalitis in a young woman presenting with psychiatric symptoms.
2. Prompt diagnosis and early start of treatment is important to give patient better chance of full recovery.
3. Ovarian dermoid cyst is quite common but anti NMDA encephalitis associated with it is a rare but serious condition that should be kept in mind in women with foresaid

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