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Case Study

Dysphagia: An Extrapyrimaldal Side Effect of Risperidone

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ABSTRACT

This is a case of six years old female patient who came in with the chief complaints of difficulty in swallow, hypersalivation, tremors, excessive sedation, slurred speech, unable to talk and fever since past one day. The patient developmentally belongs to moderate intellectual disability disorder, with a past history of previous hospitalization for behavioral disorder, during which the patient underwent MRI that showed hypoxic-ischemic injury and was discharged with the medication tablet risperidone 2mg once a day. Physical examination of Head to toe revealed Grade III tonsillar Hypertrophy in the oral cavity, with significant tonsillar enlargement which may have contributed to the presenting complaint of dysphagia. The patient was managed with intravenous fluids to maintain hydration and correct electrolyte imbalance. Paracetamol was given for symptomatic relief, while Amoxiclav (amoxicillin and clavulanic acid) was administered as oral antibiotic during the patient's stay in the hospital. Betadine gargles were advised three times a day for local symptomatic management of Grade III tonsillar hypertrophy, and tablet Risperidone 2mg was discontinued due to the development of an extrapyramidal side effect, manifested as dysphagia. The patient was closely monitored to evaluate clinical progress and minimize the risk of potential complications.

INTRODUCTION

The swallowing process is a complex mechanism involving coordination of multiple muscles and neural pathways of the oral cavity, pharynx and the esophagus. Dysphagia is a common swallowing disorder characterized by difficulty in the

movement of food or liquids from the mouth to the stomach. When dopamine is blocked in the nigrostriatal pathway, it results in reduced dopaminergic activity, which causes decreased inhibition of acetylcholine, thus relatively an increase in cholinergic activity, which leads to the development of extrapyramidal symptoms such as

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dysphagia. Clinical manifestations of dysphagia include difficulty in swallowing, choking, and coughing.

Antipsychotic drugs can also cause motor symptoms due to dysfunction of basal ganglia. Risperidone, an antipsychotic agent, is known to cause extrapyramidal side effects such as acute dystonia, parkinsonism, akathisia, tardive dyskinesia.² These adverse effects may vary in their timing and clinical presentation; some occur shortly after drug administration, and some develop after prolonged exposure to the drug.³ Dysphagia is a relatively uncommon and potentially overlooked manifestation of extrapyramidal symptoms associated with risperidone. Although risperidone, an atypical antipsychotic has lower risk of extrapyramidal side effects than the other antipsychotic agents, the risk is still not eliminated.² Therefore, recognizing the possible association between risperidone and extrapyramidal side effects such as dysphagia may facilitate early identification, management and prevention of the further potential complications

CASE REPORT:

A 6 years old female admitted in the Pediatric Medicine Department ward in Karnataka Medical College and Research Institute (KMCRI) Hubballi, on 12th July 2026

Chief complaints:

According to the mother, the child presented with the following chief complaints – Unable to swallow, hypersalivation, tremors, excessive sedation, slurred speech, unable to talk and fever since one day. At the time of admission the child was afebrile.

History of presenting illness:

The patient was previously admitted in the NICU at birth i/v/o low birth weight (LWB) and

Meconium aspiration syndrome for 1 month, developmentally belongs to moderate intellect disability disorder with past history of previous hospitalization for behavior disorder, in which patient underwent MRI, which showed hypoxic ischemic injury and was discharged with the medication tablet risperidone 2mg once a day.

Antenatal history:

Antenatal period was uneventful. The mother had regular checkups with no significant complications during pregnancy.

Head- to- toe examination

Region	Symptoms/ Findings
Head	Small
Eye	Normal
Nose	Normal
Face	Normal
Ears	Normal
Oral cavity	Grade III Tonsillar Hypertrophy
Neck	Normal
Chest	Normal
Abdomen	Normal
Limb	Normal

o/c/e: the patient exhibited multiple clinical findings on head-to-toe examination. Head examination revealed a small head. Eyes, nose, face, ears, neck, chest, abdomen and limbs were normal. Oral cavity examination revealed grade III tonsillar hypertrophy

Anthropometry:

Anthropometry assessment revealed weight, height, BMI and other parameters were appropriate for age and gender with no evidence of malnutrition

Vital parameters:



Temperature	37.0 ⁰ C
Pulse Rate (RR)	192 beats per minute
Respiratory Rate (PR)	32 cycles per minute
Blood Pressure (BP)	Not assessed
SPO2 (Oxygen Saturation)	99%

Systemic examination:

Cardiovascular System	Normal heart sounds (S1, S2) with no murmur
Respiratory System	Normal vesicular breath sounds with no added sounds
Central Nervous System	Patient was conscious and alert. Higher mental functions could not be assessed
Per Abdomen	Soft, non-tender and no organomegaly (no enlargement of liver or spleen)

Hematological report:

Items	Observed value	Normal value	Alarm
Hemoglobin	12.3	11.5-15.5g/dL	Normal
TLC	8280	4,500-13,500/uL	Normal
DLC	49/44.3	35-70%, 20/55%	Normal
PCV	36.2	35-45%	Normal
PLT	3.04	1.5 – 4.5lakh/uL	Normal
Serum urea	15.2	15-40 mg/dL	Normal
Serum creatinine	0.4	0.3-1.0 mg/dL	Normal
Na	150.8	135-145 mmol/L	Increased
K	3.6	3.5-5.2 mmol/L	Normal
Cl	108.5	96-109 mmol/L	Normal
Mg	2.3	1.7-2.4 mg/dL	Normal
Ca	9.8	8.8-10.8 mg/dL	Normal

MRI reports:

- Multiple small T2 and FLAIRS hyperintensity without diffusion restriction in B/L periventricular white matter, Hypoxic ischemic injury

The patient was finally diagnosed as Intellectual disability with Dysphagia secondary to Extrapyrimal side effect of Risperidone. The investigations included assessment of vital signs, systemic examination, physical examination, hematological investigations and magnetic resonance imaging (MRI). The vital signs were within the normal limits. Systemic examination was unremarkable. A thorough physical examination from Head to toe was done which revealed poor oral hygiene and Grade III tonsillar Hypertrophy; with significant tonsillar enlargement which may have contributed to the presenting complaint of dysphagia by the patient's attendant. The chief complaints also play a vital role in the assessment of extrapyramidal side effect caused by Risperidone; along with Dysphagia, the attendant of the patient also described other symptoms such as hypersalivation, tremors, excessive sedation, slurred speech, unable to talk, all of these are the result of D2 blockade in the nigrostriatal pathway. MRI showed Hypoxic Ischemic Injury whereas; the Hematological investigation were all within the normal limits except Sodium, which was slightly increased. The patient was managed with intravenous fluids (50ml/Hr) to maintain hydration and correct electrolyte imbalance. Paracetamol was given on SOS basis for symptomatic relief while Amoxicillin and Clavulanic acid was administered as oral antibiotic during the patient's stay in the hospital. Betadine gargle was advised three times daily for local symptomatic management of Grade III tonsillar hypertrophy and Risperidone 2mg was discontinued due to the development of extrapyramidal side effect, manifested as



dysphagia. The patient was closely monitored for clinical improvement and to prevent the possible complications.

Treatment:

SI N O	Medication	Dose	Frequency	Route of administration
1	IV Fluids	50ml/hr	-	IV
2	Tablet Paracetamol	500mg	SOS	PO
3	Tablet Amoxicillin + clavulanic acid	625mg	1-0-1	PO
4	Betadine gargle	-	1-1-1	Oral (topical)

DISCUSSION

In Behavioral disorder, the excessive dopaminergic activity in the mesolimbic circuits contributes to symptoms like agitation, aggression, irritability, or psychotic symptoms, thus dopamine (D2) blockade in mesolimbic pathway helps control behavioral symptoms by reducing the excessive dopaminergic activity. However, the action of the drug is not confined to the mesolimbic pathway as D2 receptors are also present in the other dopaminergic pathways. Risperidone has alleviated the patient's behavioral symptoms, by exerting its action in mesolimbic pathway but, while its D2 receptor blockade in the nigrostriatal pathway has led to increased levels of acetylcholine which resulted in the development of the extrapyramidal symptoms. The attendant of the patient also described other symptoms along with dysphagia such as hypersalivation, tremors, excessive sedation, slurred speech, unable to talk, all of these are the result of D2 blockade in the nigrostriatal pathway. These motor abnormalities have affected the coordination of the

oropharyngeal muscles causing dysphagia. Dysphagia is a common swallowing disorder in which an individual experiences difficulty in swallowing of food or liquids. The antipsychotics can induce sedation and disrupt the coordinated activity of the muscles involved in swallowing. The anticholinergic properties of these medications can interfere with the coordinated function of the pharyngeal muscles². The onset and clinical manifestation of adverse effects may vary, as some occur shortly after medication use while others develop with prolonged exposure.³ While risperidone has a relatively lower risk of extrapyramidal side effects than other antipsychotic medications, it does not completely eliminate the risk ².

Antipsychotic induced dysphagia is generally temporary and reversible. Discontinuing the offending medication, dose reduction, or switching to another antipsychotic drug usually improves dysphagia ². This case highlights the multifaceted management of dysphagia in paediatric psychiatry patients in which medication changes, dietary modifications and interdisciplinary teamwork were crucial.²

CONCLUSION

This case emphasizes the need for early recognition and appropriate management of dysphagia in patients receiving antipsychotic drugs. Here is a case of 6 years old female patient admitted in the Pediatric Medicine Department ward in Karnataka Medical College and Research Institute (KMCRI) Hubballi. Who presented with symptoms of Unable to swallow, hypersalivation, tremors, excessive sedation, slurred speech, unable to talk and fever since one day, during the time of admission the child was afebrile. Anthropometry assessment was normal. A physical examination, including head to toe assessment, revealed grade III tonsillar hypertrophy. An ENT consultation



was subsequently obtained and the presence of grade III tonsillar hypertrophy was confirmed.

The patient was managed with intravenous fluids to maintain hydration and electrolyte balance. Paracetamol was given for symptomatic relief, while Amoxiclav was administered as oral antibiotic during the patients stay in the hospital. Betadine gargle was advised three times daily for local symptomatic management of Grade III tonsillar hypertrophy. As in this case, Risperidone of 2mg was stopped, following which the patient's dysphagia gradually improved indicating an extrapyramidal side effect associated with risperidone. The patient remained under close observation to monitor recovery and reduce the risk of complications.

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