Differential Diagnosis in Psychosis and Autism

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Disclosures

Neither I nor my spouse/partner has a relevant financial relationship with a commercial interest to disclose.
Historical Perspective

Bleuler used the term “autism” to describe a symptom of schizophrenia

1911

Kanner used the same term to describe a childhood developmental disorder

1943

Autism was considered a subset of childhood onset schizophrenia

1950-1960s

Kolvin & Rutter made the distinction between psychosis with onset in early childhood (ASD) & psychosis with onset in adolescence (SCZ)

1970s

DSM-III formally separated autism from schizophrenia

1980

Coming full circle?

2017
Multiple Levels of Overlap

- **Brain pathology:**
  - Structural and functional abnormalities in the cerebellum, insular cortex, fusiform gyrus

- **Genetics:** shared deletions, mutations, CNVs
  - NRXN1, CNTNAP2, 22q11, 1q21, 15q13

- **Environmental risks:**
  - Advanced paternal age, maternal infection/immune activation

- **Pathogenesis:**
  - Neurodevelopmental disorders- atypical brain development around the time of symptom onset
Symptom Overlap

• Social deficits
  – Both disorders have impaired social cognition, including Theory of Mind\(^1\)

• Cognitive deficits
  – Abstract reasoning, working memory, processing speed, executive function\(^2\)

• Language deficits
  – Decreased verbal communication/output\(^3\), pragmatic language deficits

Comorbidity

• Reports on prevalence are variable

• Patients with ASD:
  – with psychosis: 3-16%\textsuperscript{1-4}
  – with schizophrenia: 0.6-3.4%\textsuperscript{5,6}

• Patients with schizophrenia:
  – with PDD NOS: 20-50%\textsuperscript{7-9}
  – with ASD: 0-11%\textsuperscript{7-9}

Psychosis

ASD

SCZ
Is it really psychosis?

- Patients with ASD may report symptoms that sound psychotic, but really aren’t
  - Auditory hallucinations
  - Paranoia
“Auditory Hallucinations”

**ASD**
- Hyperacusis
- May explain internal ambivalence
- May perceive own thoughts as a voice: “concrete externalization”\(^1\)
- Frequently experienced as part of oneself

**Psychosis**
- Frequently derogatory
- Highly suggestive AH:
  - Running commentary
  - Two voices conversing
- Experienced as foreign to oneself, outside one’s head
- No insight - perceived as real

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“Paranoia”

**ASD**
- Children who have been bullied may be more apt to be suspicious of others
- Paranoia limited to social situations, esp with known perpetrators
- Not a delusional perception but a fear based in reality

**Psychosis**
- Unrelated to prior social experiences
- May involve vague or unknown perpetrators
- May involve bizarre plots
- Present throughout the day in a variety of contexts
- No insight

It’s not paranoia if they really ARE after you
Case

• 11 yo f diagnosed with ASD at age 6
• Started 5\textsuperscript{th} grade at her public school with an IEP
• Experiencing profound academic stress
• Parents going through contentious divorce
• She developed AH of several voices mocking her, experienced as real, present 24/7
• Symptoms resolved with intensive treatment, risperidone and modified IEP, and she was able to return to school at prior level of functioning
ASD with Psychosis

• Premorbid ASD - chronic social, cognitive and behavioral deficits

• Followed by later emergence of new psychotic symptoms
  – Brief reactive psychosis- stress induced psychosis
  – Mood disorder with psychotic features

• Accompanied by functional impairment
  – Typically mild to moderate
  – Always time limited
ASD with Psychosis

• Stress-induced psychosis in ASD\(^1\)
  – “Micro-episodes” of psychosis: brief and transient
  – Triggered by stress, resolve when stress is absent

• ASD patients are at 3x greater risk for having isolated psychotic symptoms\(^2\)

• ASD patients display psychotic symptoms with stress or anxiety\(^3\)

Is it ASD or Schizophrenia?

Features of ASD

- Impairment in non-verbal communication
- Lack emotional reciprocity
- Stereotyped language

Features of Schizophrenia

- Flat affect
- Social withdrawal
- Alogia

How do you distinguish?

• Developmental history is critical
  – May become more prominent over time

• SCZ symptoms emerge after grossly normal development
  – Followed by gradual, persistent functional decline
  – Then emergence of positive symptoms
Social Deficits

**ASD**
- Present from early childhood
- May be socially motivated, but clumsy
- May be verbal but inappropriate

**Schizophrenia**
- Develop after a period of normal functioning
- Lack of social motivation
- Withdrawal from friends and family
- Paucity of speech/content
Case

• 24 yo male with ASD, limited social function, good academic function
• Just started first year of business school- developed difficulty with concentration and memory
• Withdrew from family and few friends
• Developed PI (being followed by CIA) and AH
• Calling police several times a day, eventually hospitalized
• Stabilized on olanzapine but continued to have functional impairment and unable to return to school
ASD with Schizophrenia

• Rare but real
• Premorbid ASD - chronic social, cognitive and behavioral deficits
• Followed later in development by further functional decline (social and cognitive)
• Then, emergence of new psychosis
  – True AH, paranoia, delusions, disorganization
  – DSM 5: “prominent delusions or hallucinations must be present for one month”
ASD with Schizophrenia

Key aspects of differential (with brief reactive psychosis):

• Onset may be influenced by stress, but symptoms are not solely stress dependent

• Functional impairment
  – Additional impairment from baseline - typically severe
  – Chronic- patients do not return to baseline
Conclusion

• Substantial symptom overlap and true comorbidity between ASD, psychosis and schizophrenia

• Accurate diagnosis can be made by:
  – Careful, detailed symptom history
  – Developmental history- timing of onset of symptoms
  – Functional assessment over time
Thank you!