

## A REVIEW ON FOREIGN ACCENT SYNDROME

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Article Received on 27/04/2022

Article Revised on 18/05/2022

Article Accepted on 07/06/2022

**ABSTRACT**

Foreign accent syndrome is a rare disorder of speech in which patient observe that he/she speaks in a foreign accent other than his/her native place. This disorder is also known as pseudo-accent and it was first seen in 1940. Foreign accent syndrome is diagnosed more in females as compared to males. This disorder is mainly seen in age range of about 25-49 years. It may also affect the psychological behavior of patient. The mechanism of this disease is still not known. In this article different cases were studied and it was reported that the patients previously suffered from head injuries and thus conclude, it might be a psychological disorder.

**KEYWORDS:** Foreign accent syndrome, psychological disorder.**INTRODUCTION**

Foreign accent syndrome is a rare disorder of speech in which patient observe that he/she speaks in a foreign accent other than his/her native place. This disorder is also known as pseudo-accent. This disorder is caused by damage in left hemisphere of the brain. Only few cases of this disorder is reported till now. Foreign accent syndrome is diagnosed more in females as compared to males. This disorder is mainly seen in age range of about 25-49 years. It may also affect the psychological behavior of patient. Patients may feel uncomfortable in speaking with others, which may have a huge impact on their self-perception. Foreign accent syndrome is reported in all around the world, like some accent change from Japanese to Korean, American English to British English etc. This disorder is mainly reported in adult patient and the patient even don't understand how it happened. FAS patients also affected from many abnormalities such as stress, rhythm and intonation. In most of the patients, such disorder occurred due to lesions in the perisylvian speech region which involve the prerolandic motor cortex (BA 4), the frontal motor association cortex (BA 6 or 44) and striatum.<sup>[3]</sup> In only few cases, such disorder came without any lesions occurred in perisylvian speech region inside the brain. In 1907, this disorder was firstly reported<sup>[1]</sup> In early 1918, Foreign Accent syndrome was firstly described<sup>[8]</sup> The French Neurologist "Pierre Marie" was the first who described this condition and later on "Alois Pick" reported it in 1919 in Czech study.<sup>[2]</sup> Monrad-krohn was the scientist who noticed that some patient suffered from this condition after trauma in 1947. It is believed that the most common cause of FAS are traumatic brain injuries

and stroke that occurred in left hemisphere of brain.<sup>[4]</sup> In FAS conditions the patient used to talk in non-specific or generic accent and not talk in its original accent.<sup>[5]</sup> MS-associated with FAS disease is meant to be rare as only two cases have been reported.<sup>[15]</sup> FAS disease may cause if a person is suffering from diseases such as cerebrovascular disease, brain injury, multiple sclerosis, neurodegenerative diseases, mental disorders etc.<sup>[19,20]</sup>

After years of research of this disorder, researchers were not able to identify the pathophysiological substrate of this FAS and thus, did not identify the coherent system in speech error which can help the researcher to separate the FAS from AoS (anarthria, verbal apraxia, speech apraxia) or ataxic dysarthria.<sup>[6]</sup>

**Note:** There was only about 100 cases reported, since it was first seen in 1940. It was seen in world war 2, a Norwegian women got hurt in brain which results in brain injury, this happened due to a piece of shrapnel which was hit deep inside her brain and after that she started speaking in German accent but she never went to Norway.

The change in accent may be occurred after an ischemic or hemorrhagic stroke.<sup>[7]</sup> FAS may primarily associated with left hemisphere lesions<sup>[9]</sup> and secondary to Cerebrovascular accident<sup>[10,11]</sup> and traumatic brain injury.<sup>[12,13]</sup>

**Neurological condition or damage**

Patients who suffered from this disorder would have a neurological condition or having history of head or facial

injuries. Factors which can cause foreign accent syndrome are:

- Face injury or head injury
- Neurological surgery
- Brain tumors

### Case Study

#### Case study 1

A lady got stuck in an accident and thus had a head injury. She was 41-year-old lady and she went to coma. The brain CT scan was conducted and it was seen that hemorrhage occur in left temporal lobe and haematoma was occur in left temporal subdural. The treatment was started and after that she was recovered from coma condition and thus able to speak. But somehow her accent changed into Mandarin (official language of china). But with the help of language functioning exercise, the patient regains her natural accent after 10 days and after 3 months the patient did not speak in foreign accent.<sup>[14]</sup>

#### Case study 2

A boy who got hurt in head and thus caused head injury. He was 25 years old and went to coma. CT scan indicated that the contusion was held in left temporal lobe and heamatoma occurred in right side of dura matter and it was seen that he had diffuse axonal injury and also had multiple brain hemorrhage. After the treatment of the patient, patient turned into conscious and able to speak. But his accent changed into Mandarin. The patient regained his local accent after 1 month by verbal guidance and as well as by strengthen his nerve function. Patient's foreign accent was fully disappeared from his language after 6 months.<sup>[14]</sup>

#### Case study 3

A 34 years old US born African American women was brought to the psychiatry emergency for the assessment of aggression. She had a medical history of paranoid schizophrenia. The patient also mentioned that she was hit multiple times in the face during a disagreement by her landlady with a closed fist. She was presented with a British accent. She has been in emotional stress. FAS is rare and poorly understood and specially the psychogenic FAS. The patient treatment was continued but still she spoke in British accent.<sup>[16]</sup>

#### Case study 4

A 33 years old French speaking lady consulted the neurology department for developing a Dutch or German like accent after hitting by a car six months back. The lady belongs to a village in the francophone Walloon part of Belgium near the Flemish border. She had no family history of neurodevelopment disorder. There was no loss of consciousness during the accident but after few months her accent was changed and she also mentioned that she feels a change in her personality and behavior. She feels that she has become a new person after the accident. CT scan of the brain and spinal cord was normal only minor trauma was diagnosed.<sup>[17]</sup>

#### Case study 5

A lady belonged from Spain who had suffered from multiple sclerosis, she was 65 years old lady and after that she suddenly started to speak in British accent. MRI scan was performed that revealed that sclerosis had destroyed her myelin which causing demyelination in her brain, resulting in disrupting nerves which have the ability to send signals.

#### Pathogenesis

FAS mechanism is still not known, but there are two hypothesis to justify its mechanism and one of which is that the inhibition of 'neural circuits' which can cause 'trace conditioned reflex' that is situated in Pavlov doctrine and other is that the destruction of local accent nerve center but having undamaged foreign accent nerve center.

FAS tends to be a language, accent, or might be memory dysfunction syndrome. A motor speech network is required for the formation of language. The local accent memory loop which is damaged can be reformed in order to attain the natural or individual's accent.

FAS tends to be a developmental motor speech disorder rather than a clinical syndrome.<sup>[18]</sup>

#### Diagnosis

Foreign accent syndrome has no specific test for its diagnosis. It is mainly identified, when person himself or other person noticed the change in the accent of the patient.

To identify the cause of the syndrome, doctors take some test that are

- Blood test
- MRI scan for scanning brain
- A lumbar puncture, mainly done for seeing the infection in spinal fluid and also analyze the other nervous system disorder

#### Treatment

In most of the cases doctors mainly sees the cause and thus treating the disorder but in some cases, when patients do not suffered from any other neurological disorder then a speech therapy is the only option for regaining the natural accent of the patient.<sup>[14]</sup>

#### CONCLUSION

Foreign accent syndrome is a rare disease especially in India, such disease might occur from previous injury somewhere in head and some of other reason that might not known and in case studies, it was just seen that the patients were diagnosed with minor brain injuries that leads to such disease. From this article we mainly want to highlight the disease which is rare but moreover, it is not completely treatable. So, by this article we want to let the people know about this disease. This disease

might be a great challenge for its further studies for the researchers.

## REFERENCES

1. Marie P. Presentation de malades atteints d'anarthrie par lesion de l'hemisphere gauche du cerveau. *Bulletins et Memoires Societe Medicale des Hopitaux de Paris*, 1907; 1: 158–160.
2. Pick, A. Über Änderungen des Sprachcharakters als Begleiterscheinung aphasischer Störungen. *Zeitschrift für gesamte Neurologie und Psychiatrie*, 1919; 45: 230–241.
3. Kurowski KM, Blumstein SE, Alexander M. The foreign accent syndrome: reconsideration. *Brain Lang*, 1996; 54(1): 1–25.
4. Edwards RJ, Patel NK, Pople IK. Foreign accent syndrome and brain injury: syndrome or epiphenomenon? *Eur Neurol.*, 2005; 53(2): 87–91.
5. Coughlan T, Lawson S, O'Neill D. French without tears? Foreign accent syndrome. *J R Soc Med.*, 2004; 97.
6. Marien,P., Verhoevel,J., Wackenier, P.,Engelborghs,S.and De Deyn,P.P. Foreign Accent syndrome as adevelopmental motor speech disorder.*Cortex*, 2009; 45(7): 870-878.doi:10.1016/j.cortex. 2008.10.010.
7. Takayama, Y, Sugishita, M, Kido, T, Ogawa, M, Akiguchi, I. A case of foreign accent syndrome without aphasia caused by a lesion of the left precentral gyrus. *Neurology*, 1993; 43: 1361–1363.
8. Pick A. Über anerungen des sprach-characters als begleiterscheinung aphasischer storungen. *Zeitschrift fuer de gesamte Neurun Psychologie*, 1919; 54: 230-241.
9. K.M. Kurowski, S.E. Blumstein and M. Alexander, The foreign accent syndrome: a reconsideration, *Brain and Language*, 1996; 54: 1–25.
10. C. Avila, J. Gonzalez, M.-A. Parcet and A. Belloch, Selective alteration of native, but not second language articulation in a patient with foreign accent syndrome, *Neuroreport*, 2004; 15: 2267–2270.
11. Y. Takayyyama, M. Sugishita, T. Kido, M. Ogawa and I. Akiguchi, A case of foreign accent syndrome without aphasia caused by a lesion of the left precentral gyrus, *Neurology*, 1993; 43: 1361–1363.
12. T.J. Carbary, J.P. Patterson and P.J. Snyder, Foreign Accent Syndrome following a catastrophic second injury: MRI correlates, linguistic and voice pattern analyses, *Brain and Cognition*, 2000; 43: 1–3.
13. M. Lippert-Gruener, U. Weinert, T. Greisbach and C. Wedekind, Foreign accent syndrome following traumatic brain injury, *Brain Injury*, 2005; 19: 955–958.
14. Liu H.E, QI P., Liu Y.L, Liu H.X, Li G. Foreign Accent Syndrome: two case reports and literature review. *European Review for Medical and Pharmacological Sciences* 2015; 19: 81-85.
15. Bakker JI, Apeldoorn S, Metz LM. Foreign accent syndrome in a patient with multiple sclerosis. *Can J Neurol Sci.*, 2004; 31(2): 271–2.
16. Kenneth Asogwa, Carolina Nisenoff, Jerome Okudo, "Foreign Accent Syndrome, a Rare Presentation of Schizophrenia in a 34-Year-Old African American Female: A Case Report and Literature Review", *Case Reports in Psychiatry*, vol. 2016, Article ID 8073572, 5 pages, 2016.
17. Keulen S, Verhoeven J, De Page L, Jonkers R, Bastiaanse R and Mariën P, Psychogenic Foreign Accent Syndrome: A New Case. *Front. Hum. Neurosci.*, 2016; 10: 143. doi: 10.3389/fnhum.2016.00143.
18. Mariën P, Verhoeven J, Wackenier P, Engelborghs S, De Deyn Pp. Foreign accent syndrome as a developmental motor speech disorder. *Cortex*, 2009; 45: 870-878.
19. Polak Ar, Witteveen Ab, Mantione M, Figeo M, De Koning P, Olf M, Van Denmunckhof P, Schuurman Pr, Denys D. Deep brain stimulation for obsessive-compulsive disorder affects language: a case report. *Neurosurgery*, 2013; 73: E907-910.
20. Mendis D, Haselden K, Costello D. Short case report: 'Speaking in tongues'--foreign accent syndrome. *Logoped PhoniatrVocol.*, 2013; 38: 79-81.