

Blind Spots in Neuroradiology: Editorial

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Abstract

There are blind spots in the eye and blind spots in the brain and these spots can make inexperienced radiologist with untrained eye miss some important findings, not because he/she can see them and do not understand them, but because they are hidden/or better to say our brains neglect to see them. Our brains and eyes focus on the important details or what the brain thinks it's important. Some of the findings might small in size or do not appear on certain windows therefore; these findings need an examiner who has an eye for details in order to find these pathologies.

Keywords: Blind Spots; Neuroradiology; Scotoma; Punctum Caecum; Missed Diagnosis.

Editorial

In the human eye there is an area called the optic disc where the nerve fibers and retina meet to form the optic nerve in the optic disc where the optic nerve emerges. This area has a lack of light-receptor cells which makes light undetectable in this region and it makes what is known as a blind spot. Sometimes when a car driver hit another car the driver say "I did not see the car coming from behind" that is known as "vehicle blind spot". A blind spot can be easily demonstrated by placing two letters for example A and B with some distance between them (i.e. 34 cm) and focus on one letter by seeing using one eye and closing the other eye. Focus on one letter and adjust the distance between your face near and far away from the letter until your eye can't see the other letter. Then stop at that distance where the other letter is not seen to your eye see [Figure. 1]. This phenomena is known as the blind spot. The blind spot in the eye located at 1.5 degree below the horizon and 12-15 degrees temporally. The size of the blind spot in the eye are 5.5 degrees wide and 7.5 degrees height. There is a book called "Blind Spots, why smart people do dumb things?" which summarize the whole idea of blind spots. Blind spots cause humans to miss objects in their visual fields.

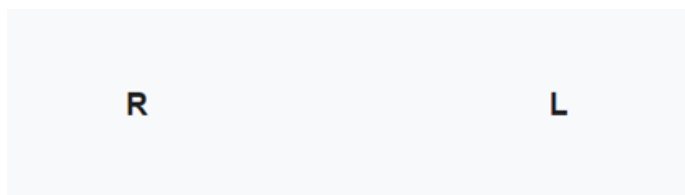


Figure 1: Blind spot illustration.

The list of the blind spots on a brain scan are: the cerebral sulci, dural sinuses, orbits, cavernous sinuses, clivus, meckel cave, skull base, brainstem, parapharyngeal soft tissues, basal cistern,

and crainovertabal junction on CT scan. Blind spot can be virtual, not anatomical blind spot. For example, when use the wrong window on CT scan which can prevent seeing details. A comprehensive checklist includes all possible hidden areas must be kept in mind or as a note during interpretation of brain scans. This check list will prevent any false-negative result. Similarly, interpretation pitfall can lead to false-positive result such as any anatomical variation confused the interpreter to believe it is a pathological condition or process.

Interpretation errors can be either cognitive or perception in nature. Cognitive errors are identified, but the radiologist is not able to tell the significance or the meaning of the pathology which will cause false-positive result. In perception errors, the radiologist will not see the pathology which will cause false-negative result as in diagnosing an anatomical variation as a pathology. As well, in cases of true-positive result, the radiologist will make wrong classification of the disease.

The reasons that causes the false-negative results are: search satisfaction due to identifying one pathology (and missing others), too many cases and high work loud, wrong or incomplete clinical history, prioritizing cases, etc. Therefore; all radiologists must be trained to avoid missing a blind spot by doing a double check and ask for a second opinion. Reduce work loud on radiologists, so they can report better. Train radiologists how to manage to work under stress and doing radiology reports for emergency cases. The list of the blind spots in the brain must be made as a note near the reporting area to be remembered and reminded by it all the time and to be the "check list" in every brain scan.

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