UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

IN RE: NATIONAL FOOTBALL LEAGUE PLAYERS' CONCUSSION INJURY LITIGATION	:	No. 2:12-md-02323-AB MDL No. 2323
THIS DOCUMENT RELATES TO: APPEAL OF SETTLEMENT CLASS MEMBER [redacted] REGARDING CALCULATION OF MONETARY AWARD	:	**Hon. Anita B. Brody**

INTRODUCTION

On November 22, 2019, [redacted], a Retired NFL Football Player and Class Member, filed a claim for benefits under the Amended Class Action Settlement Agreement. He received a Qualifying Diagnosis of Level 2 Neurocognitive Impairment through the Baseline Assessment Program. However, the Claims Administrator offset his Monetary Award by 75% when it found that he had a "medically diagnosed Stroke occurring prior to a Qualifying Diagnosis."[1]

Mr. [redacted] appeals this deduction.[2] He argues that he did not suffer a Stroke, that if he did, it was not causally related to his impairment, and that the Settlement does not compel an offset given his medical history.

After consulting with the Appeals Advisory Panel, I find that Mr. [redacted] has shown clear and convincing evidence of error in the Claims Administrator's decision to reduce his award.

FACTUAL AND PROCEDURAL BACKGROUND

Mr. [redacted] retired from a ten-year football career in 1998. In 2009, Dr. [redacted], a neurologist, noted memory loss as a part of an evaluation completed through the NFL's Disability Plan. Doc. 223162. In 2013, Dr. [redacted], a neurologist, conducted a similar evaluation and

[1] Settlement Agreement 6.7(b)(ii).

[2] *See* Settlement Agreement, Section 9.8. The Special Masters must decide an appeal of a Monetary Award based on a showing by the appellant of clear and convincing evidence that the determination of the Claims Administrator was incorrect. *See* Order Appointing Special Masters, at 5. "Clear and convincing evidence" is a recognized intermediate standard of proof—more demanding than preponderance of the evidence, but less demanding than proof beyond a reasonable doubt. *In re Fosamax Alendronate Sodium Prods. Liab. Litig.*, 852 F.3d 268, 285-86 (3d Cir. 2017) ("Black's Law Dictionary defines clear and convincing evidence as 'evidence indicating that the thing to be proved is highly probable or reasonably certain.'").

diagnosed Mr. [redacted] with "moderate neurocognitive impairment." Doc. 223163. These evaluations, conducted long before the Settlement's effective date, did not use a testing protocol that would make their assessments easily assimilable into the Settlement framework—although "moderate neurocognitive impairment" may be best understood as Level 1 Neurocognitive Impairment. Doc. 225788.

On May 3, 2016, Mr. [redacted] suffered an intracranial hemorrhage with ventricular extension—colloquially, a significant bleed into his brain tissue. Doc. 223167. The etiology of this hemorrhage is complex and unclear. Dr. [redacted], Mr. [redacted] surgical neurologist, wrote in 2019 that the hemorrhage followed a "ruptured left orbitofrontal aneurysm which was in turn secondary to an arteriovenous malformation ('AVM') in the left frontal hemisphere." *Id*. This late-arriving letter described the AVM as unusual, as it was both superficial (i.e., not deeply buried in the brain) and in an uncommon location. *Id*. According to Dr. [redacted] such unusual structures are rare and in his "experience and opinion, are either congenital or caused by external trauma of the sort that Mr. [redacted] endured while playing football." *Id*.[3]

It is puzzling that, though the parties both discuss this conclusion at length, in the notes Dr. [redacted] *contemporaneously* produced, he focused on the aneurism, not the AVM, and described it as located in the left orbitofrontal branch of the left anterior cerebral artery. *Separately*, he noted "there is also an arteriovenous malformation seen . . . No arterial feeders to the nidus [of the AVM] come primarily from the orbitofrontal branch of the left anterior cerebral artery. The nidus of the AVM drains into a superficial vein that goes on to drain into the superior sagittal sinus." Moreover, after Dr. [redacted] embolized the left orbitofrontal artery, while the aneurism was obliterated, some of the AVM remained, perhaps related to the distal branches of the ophthalmic artery. That is, the surgical notes do not clearly state that the aneurism was secondary to the AVM (or even clearly state how they anatomically related). Doc. 223168. To the extent that the etiology of Mr. [redacted] hospital stay was relevant, as the parties seemed to originally argue, more focus on these contradictory details might have been useful.

Following his hemorrhage and embolization, Mr. [redacted] underwent inpatient rehabilitation therapy until November of the same year. He was subsequently seen by neuropsychologist Dr. [redacted] through the BAP on November 16, 2017. Doc. 196786. Dr. [redacted] concluded that Mr. [redacted] met the criteria for a diagnosis of Level 2 Neurocognitive Impairment. *Id*. Dr. [redacted], a BAP neurologist, evaluated Mr. [redacted] on December 7, 2017, and agreed with Dr. [redacted] findings. Doc. 196785.

In submitting his claim, Mr. [redacted] checked a box indicating that he had suffered a Stroke (Doc. 217579, at 4), but also submitted a supplemental statement reserving his rights on that ground. Doc. 217564.

---

[3] Mr. [redacted] also submitted an undated letter and unaddressed letter from Dr. [redacted] which his brief describes as "earlier" than the one from 2019. That letter, said to be produced "in relation to potential applications for disability benefits," states that Mr. [redacted] hemorrhage was "secondary to an arteriovenous malformation (AVM) and a cerebral aneurysm (Flow-related) secondary to the AVM. The AVM was situated intracranially just behind the left eyebrow. This kind of superficial AVM, which looked almost like a dural arterio-venous fistula, is usually an acquired AVM with strong correlation to trauma." Doc. 223170.

The Claims Administrator, determining that Mr. [redacted] had satisfied his burden of establishing a Level 2 Neurocognitive Impairment on March 5, 2020, nonetheless applied the Stroke offset, which reduced his overall award by almost a million dollars. Doc. 221360. That decision rested on an AAP Reviewer's analysis from February 18, 2020. Doc. 225788.

Mr. [redacted] appealed. Doc. 223161. The NFL Parties, opposing the appeal, do not contest the underlying Diagnosis of Level 2 Neurocognitive Impairment, but rather defend the application of the offset. Doc. 224178.

DISCUSSION

Mr. [redacted] contends that the intracranial hemorrhage he suffered on May 3, 2016, was not a "Stroke" under the Settlement. Doc. 223161. If he is correct, then the remainder of his appeal (which is densely argued and turns on the relationship of the stroke to his disability) is moot.

All agree that the Settlement provides that the stroke offset applies (subject to certain exclusions) if a "medically diagnosed stroke" occurs before the Qualifying Diagnosis.[4] The Settlement defines a "Stroke"—which I'll capitalize going forward when referring to the Settlement's term—with precision:

> 'Stroke' means stroke, as defined by the World Health Organization's International Classification of Diseases, 9th Edition (ICD-9) or the World Health Organization's International Classification of Diseases, 10th Edition (ICD- 10), which occurs prior to or after the time the Retired NFL Football Player played NFL Football. A medically diagnosed Stroke does not include a transient cerebral ischaemic attack and related syndromes, as defined by ICD-10.[5]

Mr. [redacted] while mentioning this definition, did not discuss it in his original briefing, and instead relied on Dr. [redacted] October 23, 2019 letter. Dr. [redacted] states:

> In my training and experience, 87% of incidents commonly referred to as "strokes" are caused by a blood clot in the brain (i.e. ischemic) leading to a lack of blood supply to the brain. The other 13% are known as "hemorrhagic" and are characterized by bleeding in the brain. *Only 1% of all are caused by an AVM. In my experience, [what Mr.* [redacted] *suffered] would not be described or characterized as a "stroke" due to its abnormality and potential external traumatic origin*, for the same reasons that I would not consider a subdural hemorrhage secondary to a fall or blow to the head to be a "stroke".

Doc. 223167 (emphasis added).

The AAP Reviewer, whose analysis motivated the Claims Administrator to apply the Stroke offset, disagreed: "The intracranial hemorrhage that the player suffered can also be referred

[4] *See* Settlement Agreement, Section 6.7(b)(ii).
[5] *See* Settlement Agreement, Section 2.1(wwww).

to as a stroke (in this case hemorrhagic and not the more common ischemic type) *or a cerebrovascular accident*." Doc. 225788 (emphasis added).

Finally, the NFL Parties' first round of briefing also ignored the relevant definition. That briefing did discuss later medical records offered by Mr. [redacted] medical providers, including his regular neurologist (Dr. [redacted] his diagnosing neuropsychologist, Dr. [redacted] and his diagnosing neurologist, Dr. [redacted]—all of whom described his condition as reflecting cognitive loss due to stroke. Doc 224178, at 1-3. The NFL Parties also pointed to multiple pieces of social media evidence in which the [redacted] family discusses the event as a stroke. *Id*. at 2-3.

As neither party, nor the original AAP Reviewer, described or applied the relevant definition from World Health Organization's International Classification of Diseases, 9th Edition (ICD-9) or the World Health Organization's International Classification of Diseases, 10th Edition (ICD- 10), I turned to the AAP for its expert advice and specifically asked the Reviewer to apply the definition provided in the Settlement. The AAP Reviewer replied with the following helpful commentary

> There are two parts to the Special Master's first question, the first part is to determine if the hemorrhage event is considered a stroke according to ICD-9/ICD-10, and the second part is to determine if there is any indication of an ischemic stroke.
>
> Regarding the first part of the question, while intracranial hemorrhage is commonly referred to as a "stroke" or "hemorrhagic stroke" by clinicians, both ICD-9 and ICD-10 classify this with different codes than are used for ischemic stroke. Access to ICD-9 and ICD-10 codes is freely available at the CDC website.
>
> Both ICD-9 and ICD-10 classification systems include codes for both intracranial hemorrhage and ischemic stroke under the larger heading of cerebrovascular disease, so these are related disorders, but both classification systems use different codes to indicate intracranial hemorrhage than for occlusion of cerebral arteries (ischemic stroke). For instance, in ICD-10 I believe the codes are I60-I62* which specify the type and location of intracranial hemorrhage, and there are separate I63* codes which indicate the cause and location of an ischemic stroke. In ICD-9, I believe the codes are 430-432 for intracranial hemorrhage and 434 for occlusion of cerebral arteries.
>
> Consequently, while both intracranial hemorrhage and ischemic stroke are commonly referred to as "stroke" by clinicians and both are included under the larger category of cerebrovascular disease, it is my understanding that these disorders have separate and distinct ICD-9 and ICD-10 codes.
>
> The second part of the question is more difficult to answer, the report by Dr. [redacted] indicates that there was left frontal encephalomalacia identified by a brain MRI scan. Encephalomalacia is the term commonly used to describe changes in the brain substance due to injuries such as ischemic stroke. Other types of brain

> injury may also cause encephalomalacia or the appearance of encephalomalacia on a brain MRI scan.
>
> In my opinion it is not possible to determine if the reported encephalomalacia is a direct cause of the intracranial hemorrhage or if it could have been caused by a related ischemic stroke, either would certainly be possible.

Doc. 226440 (line breaks added).

This analysis thus concludes that whatever its etiology, an intracranial hemorrhage is not a Stroke under the ICD-9/10. Dr. [redacted] report concluded that Mr. [redacted] had suffered an "intracranial hemorrhage in the setting of uncontrolled hypertension." Doc.196785 at 2. In the Diagnosis section of his report, Dr. [redacted] defined this event with code I60.7, a "ruptured aneurism of the intracranial artery," but which is defined by the ICD-10 more precisely as a "nontraumatic subarachnoid hemorrhage from [an] unspecified intracranial artery." Obviously, this event does not fall under an I63 code, and, according to the AAP Reviewer, it was not a Stroke.

This conclusion may seem surprising. To assure myself that this result was plausibly correct, I wrote the Parties the following question and called for additional briefing:

> Given that the BAP indicated that Mr. [redacted] suffered a nontraumatic subarachnoid hemorrhage from [an] unspecified intracranial artery, which is listed in the ICD 10 under billing code I60.7 (Doc.196785), please address whether he suffered a "stroke" under the Settlement, "as defined by the World Health Organization's International Classification of Diseases, 9th Edition (ICD9) or the World Health Organization's International Classification of Diseases, 10th Edition (ICD- 10)." See Settlement Agreement, Section 2.1(wwww). Globally, is a "stroke" under the Settlement, as defined by the ICD 9/10, limited to occlusion of the cerebral arteries -- ischemic strokes (i.e., I63*) -- or are intracranial hemorrhages also "strokes" under the classification system, which seems to explicitly distinguish the two.

In response to my request, the NFL Parties conceded that Mr. [redacted] May 3, 2016, intracranial hemorrhage was not a Stroke. As they wrote:

> The NFL Parties agree that Mr. [redacted] "[r]uptured aneurysm of intracranial artery" listed in the ICD under billing code I60.7 does not itself constitute a "stroke" as defined by the Settlement. Nonetheless, we understand the record to reflect that Dr. [redacted] at [redacted] — a board-certified neurologist who was Mr. [redacted] treating neurologist after the surgery for his hemorrhage—diagnosed Mr. [redacted] with a separate but likely related stroke long before Mr. [redacted] received his Qualifying Diagnosis."

Doc. 226454.[6] This is a concession that the entirety of the event that Mr. [redacted] suffered in May, 2016—an AVM-linked aneurism associated with a significant intracranial bleed—was not a

[6] The NFL Parties brief is somewhat puzzling on this score, because they persist in stating that an *aneurism* is not a stroke, but the question (and the code) referred to I60.7, a "hemorrhage." In this context, the difference is semantic: the NFL Parties agree that an I60.7 coded event is not a Stroke. Mr. [redacted] counsel, not anticipating this result,

Stroke, though his doctors at the time no doubt called it one. The NFL Parties apparently share the AAP Reviewer's understanding that an intracranial bleed is not a Stroke under the ICD-9/10 classification system.

Their new argument—which I did not perceive in their original papers—is that Mr. [redacted] suffered a "separate but likely related stroke" subsequent to the surgery that embolized his aneurism, but before his later Diagnosis. The evidence for that "stroke" is impressionistic. The NFL Parties again point to the descriptions of his doctors that Mr. [redacted] had suffered a stroke, and the family's social media campaign. Neither usage of "stroke" is relevant for the reasons I've already provided.

The second stroke theory largely rests on Dr. [redacted] late 2017 summary of Mr. [redacted] office visit to Dr. [redacted], a neurologist. The office visit apparently occurred on July 11, 2017 (i.e., before the Qualifying Diagnosis but a full year post-hemorrhage). Here is the crux of the NFL Parties' argument:

> While Dr. [redacted] report states that Mr. [redacted] experienced a '[r]uptured aneurysm of intracranial artery'—a fact that is uncontested—the report does not conclude that Mr. [redacted] did not separately and subsequently experience a stroke. In fact, the available medical records for the period between Mr. [redacted] ruptured aneurysm (for which he underwent surgery) in May 2016 and his receipt of a Qualifying Diagnosis on December 7, 2017 suggest that Mr. [redacted] also suffered a diagnosed stroke. According to a summation of the medical records of his treating neurologist Dr. [redacted]—records which Claimant did not provide in his Claim Package but which were reviewed and summarized by Dr. [redacted]—Mr. [redacted] experienced a 'left cerebral hemorrhagic stroke from an aneurysm, s/p [status post] surgery.' Indeed, Dr. [redacted] reports that Dr. [redacted] conducted a neurological evaluation that 'supported the diagnosis of dementia due to stroke.'

The NFL Parties suggest that this second stroke may have resulted from the embolization procedure, citing a 7.4% rate of subsequent complications in embolized patients who were embolized like Mr. [redacted]

The NFL Parties are right that Mr. [redacted] *may* have suffered a Stroke, requiring a setoff under 6.7(b)(ii), *after* his May, 2016, intracranial hemorrhage. The AAP also noted that same possibility. But, the Reviewer warned that while it was conceivable that Mr. [redacted] encephalomalacia resulted from an ischemic stroke, "it is not possible to determine" whether that was the case. (Indeed, the encephalomalacia observed in MRIs from 2017 could have resulted from the embolization procedure of May 5, 2016.)

Moreover, this subsequent stroke theory is quite different from that relied upon by the Claims Administrator, and accepting it would require me to make very strong inferences from gaps in the record. The NFL Parties' concession about the legal effect of an I60.7 intracranial hemorrhage has consequences: to raise suspicion for a Stroke, it is not enough for Mr. [redacted]

---

offered a useful brief which concluded that: "Based on the foregoing, Mr. [redacted] suggests the most reasonable understanding of what the parties intended by as defined by the ICD-9 or -10, is only those code sections which describe the diagnosis at issue using the word 'stroke.'" (Cleaned up).

doctors to describe the symptoms of what they call a "stroke." Rather, for the Claims Administrator to appropriately apply the setoff, there must be evidence in the medical record of an event that distinct from an I60.7 hemorrhage. No such proof exists in Mr. [redacted] records.

Quite obviously, the "left cerebral hemorrhagic stroke" described in Dr. [redacted] office note is the very same I60.7 coded event that occurred on May 3, 2016. *Status post* does not mean that event being described happened after surgery: rather, as any doctor would tell you, it means that the office note sought to evaluate Mr. [redacted] status after the embolization procedure which stopped the bleed. Dr. [redacted] copying of this unsigned office note thus only reinforces that the relevant doctors referred to the May event as a stroke, and were treating him for its consequences.

And, even if it were true that the office note described a new "stroke"—that is, Mr. [redacted] was one of the 7.4% of individuals who suffered a complication from the embolization—that event would also have been a "cerebral hemorrhagic stroke from an aneurism."[7] A second hemorrhage is still not a Stroke.

It is self-evident that the Claims Administrator, to apply the Stroke offset, must in the first instance justifiably conclude that the player suffered a Stroke under the Settlement's precise meaning of that term. According to the reviewing AAP neurologist, *and the NFL Parties*, the intracranial hemorrhage Mr. [redacted] suffered did not fit in the ICD-9/10 definition of a Stroke. I therefore am constrained to conclude that it was clear error to apply the offset in the circumstances of the intracranial bleed suffered by Mr. [redacted].[8]

Assigning Stroke a meaning that excludes bleeding in the brain is an odd result. It conflicts with the way the word "stroke" is commonly used—as the [redacted] family's stroke awareness social media campaign suggests. It also defies the medically-informed understanding of the original AAP Reviewer, and even the repeated usage of Mr. [redacted] treating physicians. Worse,

---

[7] Though I agree that Mr. [redacted] medical records could have been more complete, the Claims Administrator did not reject his claim on that basis and its choice not to do so was not clearly erroneous. The NFL Parties ask that I compel disclosure of missing medical records, suggesting that Mr. [redacted] failed to produce relevant documents. But the only reason that Mr. [redacted] was subject to an offset in the first instance was a misreading of legal definition of the May 2016 event. It was not Mr. [redacted] burden to anticipate that mistake. Moreover, there is no hint in the records that any doctor ever diagnosed him with an ischemic stroke. Moreover, if the NFL Parties had previously been of the view that an intracranial bleed was not a Stroke, they might have informed the Claims Administrator earlier in claims review process in this, or any other, case, and thus helped to clarify which medical records would substantiate a setoff.

[8] If Mr. [redacted] *had* suffered a "stroke" for the purposes of Section 6.7(b)(ii), he would have had the burden of showing under 6.7(d) "by clear and convincing evidence, that the Qualifying Diagnosis was not causally related to the Stroke." Neither AAP Reviewer concluded that he met that heavy burden. The most recent concluded: "In my opinion the Player likely had some degree of cognitive impairment prior to the event and the cognitive impairment was likely worsened by the damage to the brain caused by the event, so the event would be considered as significantly contributing to the cognitive impairment but not the only cause." This explanation convinces me that were the event deemed a Stroke, Mr. [redacted] would not have been able to satisfy his burden of showing by clear and convincing evidence that the diagnosis was not causally related to the Stroke. Mr. [redacted] additional arguments about the potentially traumatic etiology of the AVM are speculative and would not have met his heavy burden of proof.

I am not convinced that this narrow meaning serves the purpose of ensuring equitable treatment between claimants.[9]

However, my role is to apply the plain language of the Settlement Agreement unless it is ambiguous. Here, the Agreement directs that the word Stroke is a Term of Art, defined by the ICD 9/10. I am reliably instructed by one of Program's preeminent appointed experts that what Mr. [redacted] suffered is not a Stroke under that classification system: it was, rather, an emergent manifestation of cerebrovascular disease, i.e., intracranial hemorrhage, I60.7 in the ICD-10, and between 430-432 in the ICD-9. The NFL Parties agree that an intracranial hemorrhage coded as I60.7 is not a Stroke. Finally, there is not even a scintilla of evidence in the record that Mr. [redacted] suffered a subsequent Stroke under the Settlement's definition.

CONCLUSION

Sometimes a stroke is not a Stroke. Where the Settlement Agreement defines Terms, both the Special Master and the Claims Administrator must follow named meanings squarely. Here, applying the Stroke offset to the circumstances of a neurologically devastating intracranial hemorrhage resulted in the discounting of Mr. [redacted] award by 75%. That decision was clearly erroneous and it is reversed.

Date: July 15, 2020

David Hoffman, Special Master

[9] If the purpose of this provision was to offer a compromise payment for players who had suffering a neurological insult which significantly complicated the evaluation of the alleged degenerative effect of their concussions, it is not obvious why deprivation of blood to the brain, rather than an abundance of it, would have mattered to the Parties. Perhaps they believed that intracranial hemorrhagic events were less likely (all else equal) to cause neurological impairment than ischemic "strokes." If so, they might have made that distinction more explicit. The Class Counsel declined the opportunity to offer supplementary briefing, making it particularly difficult to conclude that a narrow meaning of Stroke was intended.