He's been quiet this season following a turbulent spring in which he took shots at NFL Commissioner Roger Goodell, calling Goodell a "crook" and a "devil."

PITTSBURGH (AP) -- Pittsburgh Steelers linebacker James Harrison has carved out a niche as one of the NFL's most feared defenders over the last five years by straddling the line between clean and dirty play.

After one dangerous hit too many, the league apparently has seen enough.

The NFL suspended Harrison for one game following his helmet-to-facemask hit on Browns quarterback Colt McCoy last Thursday, making Harrison the first player to miss game time as a penalty under the league's revamped policy on such collisions.

Harrison's agent Bill Parise said Tuesday afternoon Harrison has already filed an appeal and expects it to be heard later this week by Art Shell or Ted Cottrell, jointly appointed by the NFL and the players' association to hear such cases.

They'll have to determine Harrison's intent when he laid out McCoy late in the fourth quarter of Pittsburgh's 14-3 victory. The 2008 NFL Defensive Player of the Year was penalized for roughing the passer on the play and said Monday he believed the hit didn't warrant further punishment.

NFL Executive Vice President Ray Anderson disagreed, pointing out the violation marked the fifth illegal hit on a quarterback by Harrison in the last three seasons. The four-time Pro Bowler has also been fined on two other occasions for unnecessary roughness over the same period.

Though Harrison hasn't been fined for such a hit in over a year, he was considered a repeat offender under the 2011 League Policies for Players manual, leading to the suspension.

Harrison, who has been highly critical of the league's crackdown on vicious hits, thanked his fans for their support on his Twitter account after the suspension was levied, adding, "I'm just going to move on from here and get ready for my next game."

Barring a successful appeal, that won't be until the Steelers (10-3) face St. Louis on Christmas Eve.

Harrison has maintained the hit didn't warrant any punishment other than the 15-yard penalty, saying Monday it was obvious to him that McCoy "chucked and ducked."

The Browns were driving in Pittsburgh territory with less than 6 minutes to play when McCoy took a snap and dropped back to pass before tucking the ball to escape the pass rush.

Harrison, who had been in coverage, approached quickly. McCoy pulled up just before Harrison arrived and flipped the ball to running back Montario Hardesty. Harrison lowered his helmet and smacked McCoy in the facemask just after the pass was released, sending the second-year quarterback to the ground.

McCoy laid on the ground for several moments before slowly getting up and walking to the sideline. He returned a few plays later to throw a game-clinching end zone interception then developed concussion-like symptoms following the game, leading the NFL Players Association to representatives to Cleveland to look into how the team handled McCoy's injury.

While Harrison believed he should have been flagged but not suspended, the Steelers pledged to press onward even if it means being without their All-Pro linebacker for next Monday night's game at San Francisco (10-3).

"We're disappointed for James because we know how hard he's worked to play within the rules," coach Mike Tomlin said. "We accept the judgment rendered by the league office and we'll move forward."

The 33-year-old Harrison has eight sacks this season despite missing a month with a fractured right orbital bone and dealing with persistent back issues.

He's been quiet this season following a turbulent spring in which he took shots at NFL Commissioner Roger Goodell, calling Goodell a "crook" and a "devil."

Harrison later apologized, saying his comments were "inappropriate," though both he and his teammates have been critical of the league's crackdown on what it considers dangerous and overly aggressive play.

The Steelers were the only team in the league to vote against the new collective bargaining agreement in August, citing the lack of a proper appeals process regarding fines and suspensions as one of their main concerns.

Now Harrison will need to rely on that process to have his suspension reduced. The odds of a successful appeal are small. Shell declined to reduce the two-game ban given to Detroit Lions nose tackle Ndamukong Suh after Suh stomped on an opponent's arm last month.

Though there has been an emphasis to play by the rules, the Steelers have been fined at least 13 times for illegal hits this season. Safety Ryan Clark was fined $40,000 after being flagged for helmet-to-helmet hits in successive weeks.

Tomlin refused to take issue with the fines or the penalties and doesn't believe it will affect the way the NFL's second-ranked defense plays the game.

"I'm not ready to paint with that kind of brush at this juncture," he said. "We've got a job to do."

For the next week, it appears the Steelers will have to do it without Harrison.