

Table 1 Varied Descriptions and Classifications of Rouvière's Sulcus Encountered in Medical Literature

Citation	Definition	Classification
Rouvière et al., 1924[1]	Grooves or furrows or cracks of the caudate lobe of the liver	None defined
Gans <i>et al.</i> , 1955[2]	An extension of the porta hepatis extending from its right margin in a caudo-lateral direction	None defined
Couinaud <i>et al.</i> , 1957[5]	An inconsistent cleft of the liver hilum, anterior to segment I	None defined
Reynaud <i>et al.</i> , 1991[3]	A deep groove at the inferior surface of the liver near the bed of the gallbladder with its first segment in the axis of the hilus and bending front and to the right	None defined
Hugh <i>et al.</i> , 1997[12]	A 2-5cm sulcus running to the right of the liver hilum anterior to the caudate process and usually containing the right portal triad	Fully Open: Sulcus opened throughout its length Partial Open: Sulcus covered at medial end
Zubair <i>et al.</i> , 2009[13]	A cleft in the liver running to the right of the hilum anterior to the caudate process which contains the right portal pedicle and accurately identifies the plane of the common bile duct	Open: A cleft in which right hepatic pedicle is visualized and is open throughout its length Fused: Pedicle not visualized or sulcus is open only at its lateral end
Cai <i>et al.</i> , 2012[14]	A natural anatomical fissure on the liver's visceral surface, located on the right lobe, right of the liver hilum, and anterior to the caudate lobe	Open Type (cleft open throughout with visible right hepatic pedicle)

		Fused (Closed) Type (pedicle not visualized), partially fused medial: A cleft that has a section closed off at its medial end partially fused lateral (aka slit): A cleft that has the lateral end closed off Scar (aka vestigial): A shallow, white linear notch or fibrous connective tissue line
Dahmane <i>et al.</i> , 2013[15]	A 2-3cm cleft running to the right of the liver hilum anterior to segment I and usually containing the right portal triad or its branches	Open: A cleft in which branches of the right hepatic pedicle were visible and the sulcus was opened throughout its length. Parenchymatous fused type: The sulcus was open only in its lateral end
Wang <i>et al.</i> , 2014[16]	A 2–5 cm transverse anatomical cleft on the visceral surface of the liver's right lobe, situated to the right of the hepatic portal between the right lobe and the caudate process	Open: A deep cleft that allows visualization of structures and is continuous with hilum Closed: A deep cleft that allows visualization of structures, but is fused medially
Thapa <i>et al.</i> , 2015[17]	No clear definition	I: Right hepatic pedicle visualized and the sulcus opened throughout its length

		II: Sulcus open only at its lateral end III: Sulcus open only at its medial end IV: Fused and pedicle not visualized or absent
Kim <i>et al.</i> , 2016[18]	A landmark in the liver that marks the level of the right posterior portal pedicle, and indicates reliably the plane of the common bile duct	Open: Not clearly defined Partially Fused: Not clearly defined Complete Fused: Not clearly defined Undefined: Not clearly defined
Arora <i>et al.</i> , 2016[19]	A fissure in the liver between the right lobe and caudate process and corresponds to the level of porta hepatis where the right pedicle enters the liver	Sulcus: Represented by a deep sulcus Scar: Represented by a scar Slit: Depth and breadth cannot be measured Open: Open toward porta hepatis Closed: Closed toward porta hepatis
Singh <i>et al.</i> , 2017[20]	A clear definition was not stated	Deep: Sulcus is deep enough to be measured Open: Medial end open towards porta hepatis making portal structures visible Closed: Medial end closed towards the porta hepatis

		Slit: Too narrow to be measured Scar: White line
Cîmpeanu <i>et al.</i> , 2017[4]	A morphological cleft on the inferior/visceral surface of the right hepatic lobe, situated between the right lobe and the caudate process	These authors used the Zubair-Dahmane classification that defines two types: Open Type: Sulcus is open at its medial end and continuous with porta hepatis. Fused Type: Sulcus is closed at its medial end or appears as a scar/slit that does not communicate with the hilum
Zhao <i>et al.</i> , 2017[10]	A cleft on the visceral surface of the liver between the right hepatic lobe and the caudate process	Type I (Open Type): A deep, conspicuous groove that is open throughout its length and continuous with the porta hepatis. Type II (Semi-open/Closed Type): A groove that is partially fused or closed at one end (usually the medial end), appearing more like a slit or a pit. Type III (Scar Type): A shallow, white fibrous line or "scar" on the liver surface without a patent cleft.

Al Nasser <i>et al.</i> , 2018[21]	No clear definition	Open: Right hepatic pedicle visible AND sulcus open throughout its length Fused: Pedicle not visualized or sulcus open only at its lateral end
Lockhart <i>et al.</i> , 2018[22]	A naturally occurring cleft in the right lobe, anterior to Segment 1	Not defined
Lattoo <i>et al.</i> , 2018[23]	A 2-5 cm sulcus running to the right of liver hilum anterior to caudate process usually containing right portal triad or its branches	Deep Open: A cleft deeper than 0.5 cm that communicates with hilum Deep Closed: Cleft is fused medially and opens only laterally Slit: A slit less than 0.5 cm deep Scar: No clear cleft but just a not-well-defined whitish line
Lazarus <i>et al.</i> , 2018[24]	A structure on the posterior surface of the liver that appears as a transverse cleft extending from the caudate process to the right lobe	Type 1A: A deep sulcus in the right lobe continuous medially within the hilum Type 1B: A deep sulcus in the right lobe fused medially Type 2 Slit-like, superficial and narrow Type 3 A scar appearing as a fused line
Almas <i>et al.</i> , 2018[25]	A cleft in the liver that progresses to the right of the hilum at the front of the caudate process with the right portal	Open: A cleft in which the right hepatic pedicle was visible and

	pedicle and accurately determines the plane of the common bile duct	sulcus was open throughout its length Fused: Not showing the pedicle or open only at the lateral end
Dubhashi <i>et al.</i> , 2018[26]	A 2-3 cm fissure on the liver between the right lobe and the caudate process, usually containing the right portal triad or its branches	Type I: Open right hepatic pedicle visualized and sulcus open through its length Type II: Sulcus open only at its lateral end Type III: Sulcus was open at its medial end Type IV- Fused: Pedicle was not visualized
Rafi <i>et al.</i> , 2018[27]	A 2-5 cm fissure in the liver between the right lobe and caudate process seen in laparoscopic cholecystectomy during the posterior dissection, containing the right portal triad or its branches.	Open: Open through its length and in which right hepatic pedicle was visualized Fused: One in which sulcus was not seen or if it was open only at its lateral end
Chen <i>et al.</i> , 2018[28]	An extra-biliary landmark on the inferior surface of the liver's right lobe, characterizing it as a 2–5 cm cleft or fissure between the right hepatic lobe and the caudate process	Open Type: A deep and easily identifiable cleft Closed Type: A shallow or fused cleft Absent Type: No visible cleft
Schendel <i>et al.</i> , 2019[29]	An oblique groove or fissure on the inferior surface of the liver's right lobe, measuring 2–5 cm and running right of the	Not defined

	liver hilum and anterior to the caudate process	
Bhatia <i>et al.</i> , 2019[30]	A cleft in the liver that is shown by retracting the gallbladder infundibulum medially	Sulcus: Well-defined Just a faint line: Not well defined
Garg <i>et al.</i> , 2019[31]	No clear definition given	1A: A deep sulcus open at its medial end and continuous with the liver hilum 1B: A deep fissure that appeared closed on the medial end due to the fusion of liver parenchyma at that point Type 2 A slit-like, superficial, narrow sulcus Type 3 A scar-like, white line where the parenchyma appeared to have fused
Jha <i>et al.</i> , 2020[32]	A 2–5 cm fissure on the liver between the right lobe and caudate process	Open: A cleft in which the medial end was opened toward right hepatic pedicle Closed: Medial end closed toward the right pedicle but lateral end remains open Scar: Linear scar-like structure.
Elwan <i>et al.</i> , 2020[33]	A 2–5-cm sulcus running to the right of the liver hilum anterior to the caudate lobe	Open: Right hepatic pedicle was identified and sulcus open throughout its length

		Fused: Pedicle not visualized or sulcus open only at its lateral end
Kumar <i>et al.</i> , 2020[34]	A cleft, anterior to the traditionally described “segment 1 of liver” which has been recently described by Couinaud	Deep sulcus: Sulcus deep and wide enough (centimetric) to measure Open: Medial end open towards porta hepatis making the portal structures visible Closed: Medial end closed towards porta hepatis Slit sulcus: Too small in its depth and breadth, so only length was measurable Scar: “just appears as a scar”
Mishra <i>et al.</i> , 2020[35]	A groove present in posterior aspect of hepatobiliary triangle to the right of hilum	“Classified according to visual appearances intra-operatively into:” Open: Not clearly defined in this study Closed: Not clearly defined in this study Slit: Not clearly defined in this study Scar: Not clearly defined in this study
Pere <i>et al.</i> , 2020[36]	Horizontal anatomical structure on the inferior face (visceral face) of the liver, from the caudate process to the right	Type Ia: A deep sulcus, with vascular or biliary elements

	hepatic lobe, between the duodenal, renal, and colic prints and behind the cystic cleft	visible, and continuous with hilum of liver Type Ib: A deep fissure, with vascular or biliary elements visible, but closed at the medial end, like a bridge or a fusion of liver parenchyma Type II: A slit-like sulcus Type III: A scar-like sulcus, which appears as a white line of fusion
Abdelfattah <i>et al.</i> , 2021[37]	A naturally occurring fissure on the visceral surface of the junction between right and caudate lobe	Slit: Shallow groove Sulcus: Deep groove pattern - Open: Medial end is open toward the neck of the gallbladder - Closed: Closed from its medial side. Scar: Superficial white scar tissue with no depth into the hepatic parenchyma
Bajpayee <i>et al.</i> , 2021[38]	A sulcus that lies oblique to the anterior and inferior border of the liver and holds the right portal pedicle	Deep, Open: A deep cleft with medial end open Deep, Closed: A deep cleft with medial end closed Slit: A narrow gap Scar: A white scar

Cheruiyot <i>et al.</i> , 2021[39]	An oblique groove on the inferior surface of the liver, running to the right of the hepatic hilum, anterior to the caudate process of the liver, and contains the right posterior portal pedicle	Open: A cleft in which branches of the right hepatic pedicle were visible and the sulcus was opened throughout its length. Parenchymatous fused: The sulcus was open only in its lateral end
Nyaanga <i>et al.</i> , 2021[40]	Any fissure, sulcus or line at the posterior aspect of the right lobe coursing towards the caudate lobe	Open: A cleft in which branches of the right hepatic pedicle were visualized and the sulcus was open throughout its length Parenchymatous fused: Sulcus was open only in its lateral end Type 1 Deep sulcus with depth>0.5cm Type 2 Shallow sulcus with depth <0.5cm Type 1A: Open deep sulcus continuous with hepatic hilum medially Type 1B: Closed deep sulcus fused medially Type 3 White hazy line
Deshatty <i>et al.</i> , 2021[41]	A horizontal sulcus on inferior surface of right lobe of the liver extending from fissure on the liver between the right lobe and the caudate process, measuring 2 – 3	Type 1A: A deep sulcus open at its medial end and continuous with porta hepatis Type 1B: Deep sulcus closed at its medial end

	cm and containing the right portal triad or its branches	Type 2 A slit-like narrow sulcus Type 3 A scar-like white line
Cawich <i>et al.</i> , 2022[42]	An impression on the visceral surface of the right hemi-liver intimately related to the right portal triad and running for various distances and/or directions into the right hemi-liver	Open: Medial end communicates freely with the transverse fissure - Groove: >5mm wide - Slit: $\leq$5mm in width Closed: Medial end covered by a bridge of liver parenchyma so there is no continuity with the transverse fissure - Groove: >5mm wide - Slit: $\leq$5mm in width Scar: A discernable depression is not present, but a linear impression is seen at expected location Absent: There is no superficial landmark discernable
Baskula <i>et al.</i> , 2022[43]	A 2–5 cm long sulcus running to the right of the liver hilum and anterior to the caudate lobe	Type I (Open): A cleft in which the right hepatic pedicle is visualized and the sulcus is open throughout its length. Type II (Closed): A partially fused sulcus which opens only at its lateral end Type III (Slit): A partially fused but it opens only at its medial end

		Type IV (Scar): The pedicle is visualized as a scar or an absent sulcus
Acet <i>et al.</i> , 2022[44]	A transverse sulcus on the inferior surface of the right lobe of the liver, running to the right of the hepatic hilum	Type 1A: A deep sulcus, open at the hilar side Type 1B: A deep sulcus, closed at the hilar side Type 2 Slit-like sulcus Type 3 Scar-like sulcus appears as a white line of fusion
Bhattarai <i>et al.</i> , 2022 ^{45]}	A 2-5cm long sulcus that runs to the right of the liver hilum, contains the right portal triad or its branches and accurately identifies the plane of common bile duct	Type I: A cleft in which the right hepatic pedicle is visualized and the sulcus is open throughout its length Type II: A partially fused sulcus which opens only at its lateral end Type III: A partially fused sulcus that opens only at its medial end Type IV: Pedicle is visualized as a scar or an absent sulcus
Manatakis <i>et al.</i> , 2022[46]	A groove in the inferior (visceral) surface of the liver, extending to the right of the porta hepatis, anterior to the caudate process and segment VI and posterior to segment V	Groove: Sulcus extends laterally from the porta hepatis, and may or may not contain a visible glissonian pedicle Slit: Sulcus has fused liver parenchyma over its medial aspect, regardless of

		dimensions or visible vessels Scar: Sulcus appears as a white line in an otherwise normal-looking liver parenchyma
Wang <i>et al.</i> , 2022[47]	A fissure or hole in the liver parenchyma on the right side of the gallbladder, with its tip pointing to the hilum hepatis or extending from the arc incisure of the right posterior hepatic pedicle	<i>"Classified according to Dahmane et al"</i> into: Open type: Not well defined Fused type: Not well defined Absent type: Not well defined *Although the author references the Dahmani classification, this is not what Dahmani described
Ragavan <i>et al.</i> , 2022[48]	a normal fissure on the inferior/posterior surface of the liver that serves as a landmark running from the caudate process toward the right hepatic lobe	Type 1 Deep Sulcus >1mm depth -1a: Deep and open to porta hepatis -1b: Deep and closed medially Type 2 Slit-like Sulcus <1mm depth Type 3 Scar-like Sulcus / a fused line
El Saman <i>et al.</i> , 2022[49]	A 2–5 cm groove on the liver's visceral surface, extending from the right anterior hilum towards the caudate process and typically containing the right portal triad or its branches	Open: The medial end is open and remains continuous with the hilum of the liver Closed: Fused medial end and an open lateral end, appearing as a pit or slit that does not directly communicate with the porta hepatis

		Scar: A faint, shallow line or a white fibrous notch on the liver surface that lacks depth and does not contain any portal structures
Gardner <i>et al.</i> , 2022[50]	An impression on the visceral surface of the right hemi-liver intimately related to the right portal triad and running for various distances and/or directions into the right hemi-liver	Open: Medial end communicates freely with the transverse fissure Groove: >5mm wide Slit: <5mm in width Closed: Medial end covered by a bridge of liver parenchyma so there is no continuity with the transverse fissure Groove: >5mm wide Slit: <5mm in width Scar A discernable depression is not present, but a linear impression is seen at its expected location Absent There is no superficial landmark discernable
Bhattarai <i>et al.</i> , 2022[51]	A 2-5cm long sulcus that runs to the right of the liver hilum, contains the right portal triad or its branches and accurately identifies the plane of CBD	Type I (open): Pedicle is visualized and sulcus is open throughout its length Type II (close): Partially fused sulcus which opens only at its lateral end Type III (slit): Partially fused but it opens only at its medial end

		Type IV (scar): Pedicle is visualized as a scar or an absent sulcus
Sreevidya <i>et al.</i> , 2023[52]	A fissure on the posterior surface of the liver, running transversely from the caudate process to the right lobe	Type 1A: A deep sulcus that is open at its medial end and continuous with the hilum of the liver Type 1B A deep sulcus that is closed on the medial end due to the fusion of liver parenchyma at that point Type 2 A slit-like, superficial, narrow sulcus Type 3 A white line scar
Voruganti <i>et al.</i> , 2023[53]	A 2–5cm long fissure running transversely between caudate process and right lobe of the liver	Open: Sulcus continuous with porta hepatis at its medial end, has measurable dimensions of length, breadth, and depth, and the right hepatic pedicle is visible Closed: Sulcus has a closed medial end and partly visible right hepatic pedicle. Length, breadth, and depth can be measured. Slit: Sulcus is shallow with no visible right hepatic pedicle. Only length can be measured.

		The breadth and depth are barely measurable. Scar: Sulcus appears as a white scar that is completely fused
Sharma <i>et al.</i> , 2023[54]	A sulcus of 2-5 centimeters in length, Rouvière's sulcus may be seen to the right of the liver hilum, above the caudate lobe	Open Type: Not defined Closed Type: Not defined
Ibralullah <i>et al.</i> , 2023[55]	A 2–5 cm long fissure located to the right of the liver hilum, visible on the inferior liver surface	Well-formed/deep: A deep groove Slit-like: A narrow and shallow sulcus Scar-like: Fused area without a groove Double sulcus: Two parallel sulci
Cirocchi <i>et al.</i> , 2024[56]	Manuscript states that Rouvière's sulcus was “ <i>defined according to Singh and Prasad</i> ”, but the publication referenced does not provide any clear definition	Manuscript states “Rouvière's sulcus was classified according to Singh and Prasad”, but the classification used differed from that proposed in the publication referenced. Type 1 (Deep): A cleft deeper than 0.5 cm is clearly visible Type 1A (Open): The sulcus communicates with the hilum Type 1B (Closed): The sulcus is fused medially and opens only laterally

		Type 2 (Shallow): A slit deep less than 0.5 cm Type 3 (Scar): There is not a clear cleft but just a not-well-defined whitish line
Hamad <i>et al.</i> , 2024[57]	A fine groove at the inferior surface of the liver, which is open at its medial end, and is claimed to be an indicator of the right hepatic portal pedicle	None documented
Ismaeil <i>et al.</i> , 2024[58]	No clear definition given by the authors	None documented
Kanhaia <i>et al.</i> , 2024[59]	A sulcus present on the lower surface of the liver	Open Type: Lips of the sulcus far apart so that the portal pedicle is visible at the floor and it is continuous with the hilum Fused type: Lips of the sulcus far apart so that the portal pedicle is visible at the floor, but discontinuous with hilum Groove Type: Lips of the sulcus are far apart, the floor contains liver tissue only & continuous with hilum Pit type: Lips of the sulcus are far apart, the floor contains liver tissue only, but discontinuous with hilum Closed sulcus: Lips are opposed, masking the floor and

		confluencing medially with the porta hepatis Slit Type: Lips are opposed, masking the floor and the medial end not confluencing Scar type: No sulcus was visible but a white fused line is seen
Smithmaitrie P <i>et al.</i> , 2024[60]	Definition not stated	Open Type: Not defined Slit type: Not defined Scar type: Not defined
Risekesan <i>et al.</i> , 2025[61]	A 2-5 cm cleft running anterior to the right lobe of the liver, corresponding to the line of attachment of the right aspect of the caudate process to the right lobe	Open-type: A visible sulcus with a connection to right hepatic intersegmental fissure Closed-type: A blind-ending sulcus
Parsa <i>et al.</i> , 2025[62]	A horizontal anatomical structure that runs from the caudate process to the right hepatic lobe on the inferior face of the liver	Deep open type: A deep, prominent groove where the medial end is open and remains continuous with the porta hepatis Deep closed type: A deep groove where the medial end is fused or closed, meaning it does not directly communicate with the porta hepatis Scar type: A shallow, faint white fibrous line or notch on the liver surface without significant depth

		Slit type: A very narrow, thin, crack-like indentation on the liver surface
Cirocchi <i>et al.</i> , 2025[63]	Manuscript states that “ <i>RS was defined according to Singh and Prasad</i> ”, but there is no clear definition in the publication referenced	Manuscript states that “ Rouvière’s <i>sulcus was classified according to Singh and Prasad</i> ”, but the classification used differs from the publication referenced Type 1 (deep): A cleft deeper than 0.5 cm is clearly visible Type 1A (Open): Sulcus communicates with Type 1B (Closed): Sulcus is fused medially and opens only laterally Type 2 (Shallow): A slit deep less than 0.5 cm Type 3 (Scar): There is not a clear cleft but just a not-well-defined whitish line
Cho <i>et al.</i> , 2025[64]	An anatomical groove extending from the anterior side of the caudate process toward the right liver, typically measuring 0.5-1.5 cm in depth and 2-5 cm in length	Open: A visible sulcus with a connection to transverse fissure Closed: A sulcus that does not freely connect