

Supplementary Material 1

Histologic characterization of atherosclerosis plaques, based on hematoxylin and eosin staining and on Masson's Trichrome staining; annotated hematoxylin and eosin stained tissues (orange: Macrophages, cyan: Outer VSMCs; green: Inner VSMCs; yellow: Collagen; black: Lipid-necrotic core; brown: Hemorrhage; purple: Calcification).

Patient 1

Type VI plaque (AHA); it is a likely thick ($> 1 \mu\text{m}$, i.e., $322 \mu\text{m}$) cap fibroatheroma, with intra-plaque hemorrhage and calcified foci. The cap is not clearly visible in an area close to a calcification.

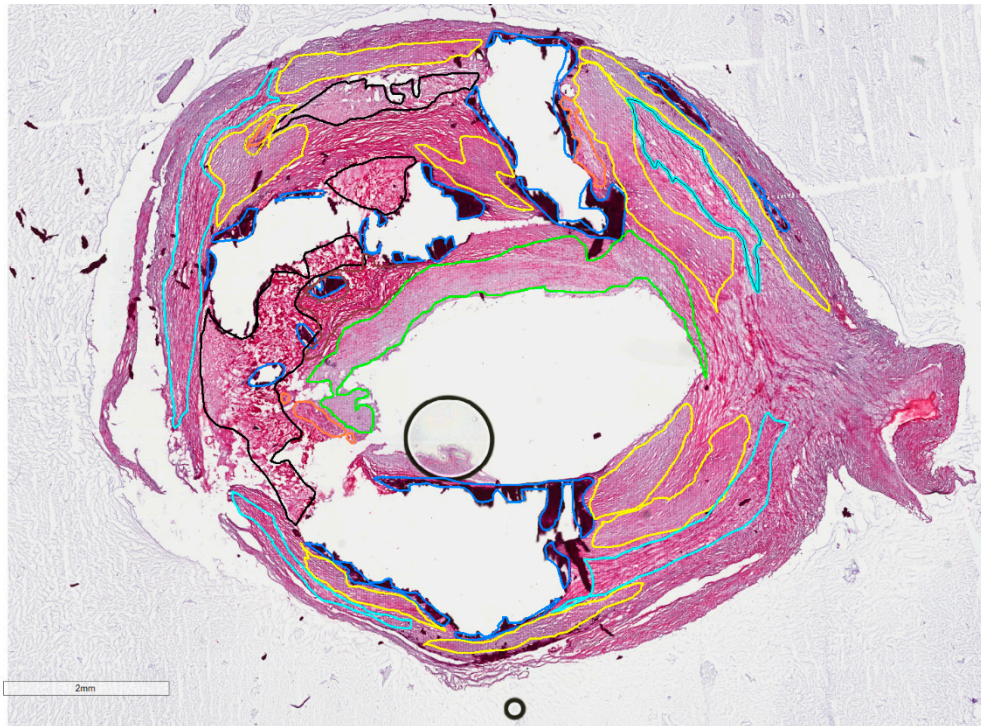


Figure S1. Annotated histological image of Patient 1.

Patient 2.

It is a Type Va plaque (AHA): fragments of an atherosclerotic plaque, recalling a fibroatheroma. Fibrous cap cannot be evaluated because of plaque fragmentation. It is characterized by a lipidic core and a fibrotic component; thrombus or intra-plaque hemorrhage are not evident (it could be a stable or non-vulnerable plaque based on the morphology, but such a definition is based on fibrous cap thickness $> 165 \mu\text{m}$).

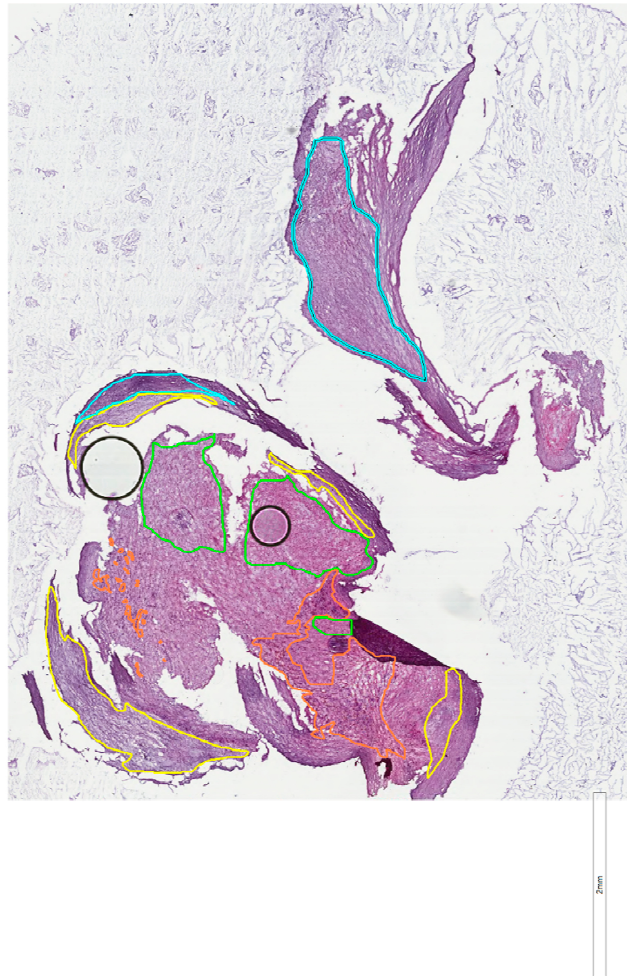


Figure S2. Annotated histological image of Patient 2.

Patient 3

Type III (intermediate) plaque (AHA): a plaque that is mainly constituted by fibrous (or fibro-muscular) tissue with a limited and predominantly intracellular lipidic component; little stenosis (non critical stenosis on this slide). The hemorrhagic and necrotic areas close to the lumen could represent fibrino-ematic stratifications. It looks like a stable (non-vulnerable) plaque.

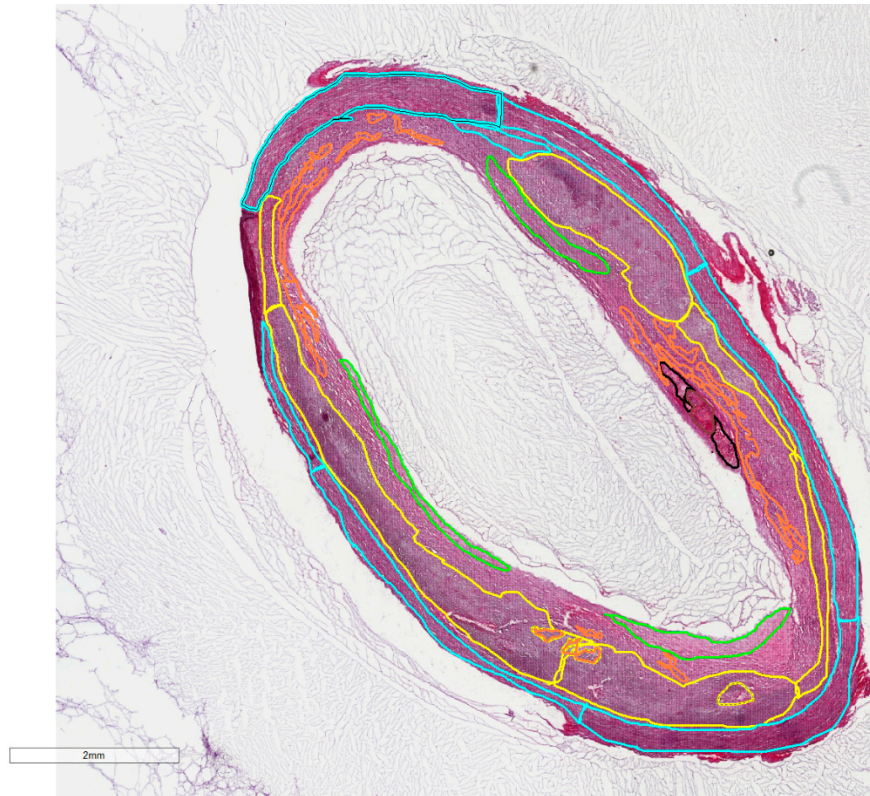


Figure S3. Annotated histological image of Patient 3.

Patient 4

Type VI plaque (AHA); it is a thick ($> 165 \mu\text{m}$, i.e., $175 \mu\text{m}$) cap fibroatheroma, with intra-plaque hemorrhage.

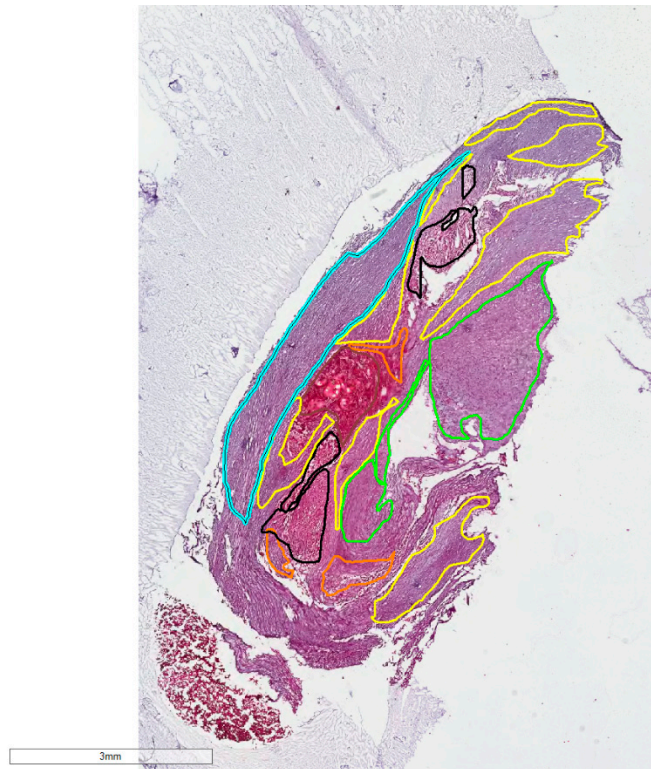


Figure S4. Annotated histological image of Patient 4.

Patient 5

Type VI plaque (AHA): a thin cap Fibroatheroma, apparently ulcerated with micro-thrombotic depositions and hemorrhage, focal calcification.

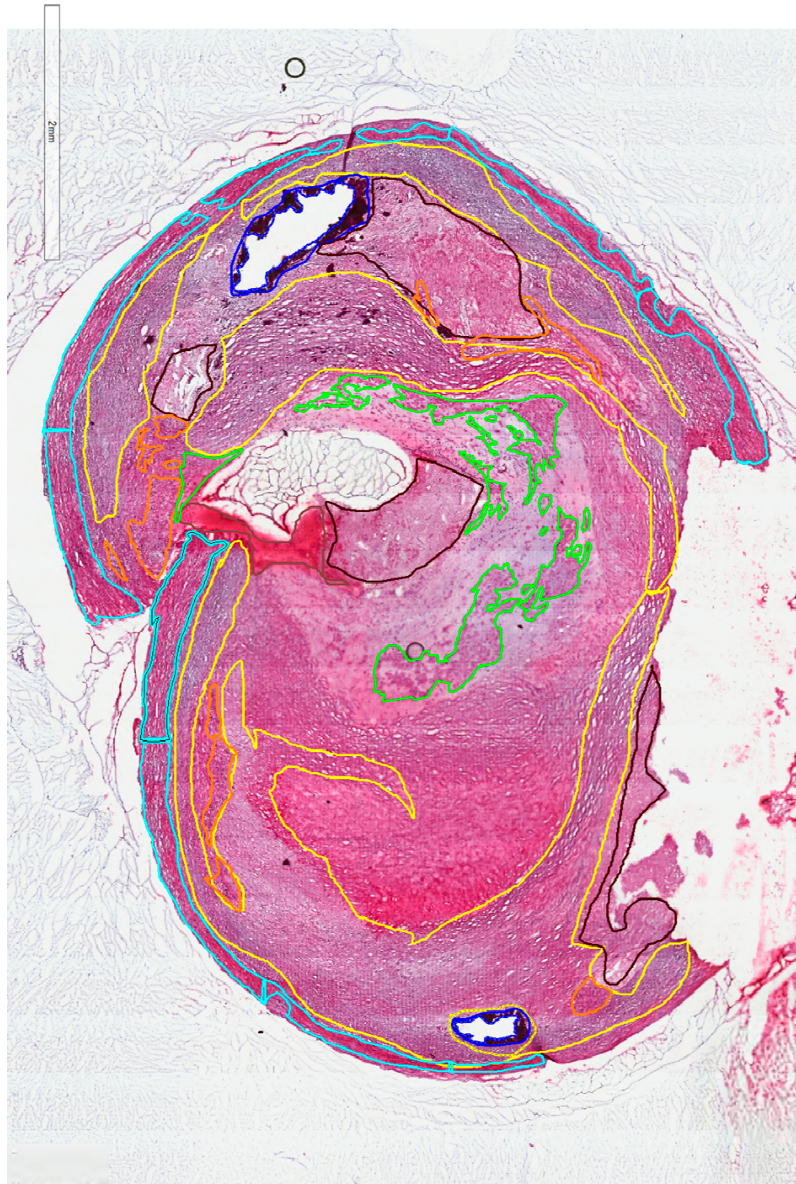


Figure S5. Annotated histological image of Patient 5.

Patient 6

It is a sub-occlusive Type VI plaque (AHA), i.e., a fibroatheroma with intra-plaque hemorrhage; it has a thick ($> 165 \mu\text{m}$, i.e., $340 \mu\text{m}$) cap.

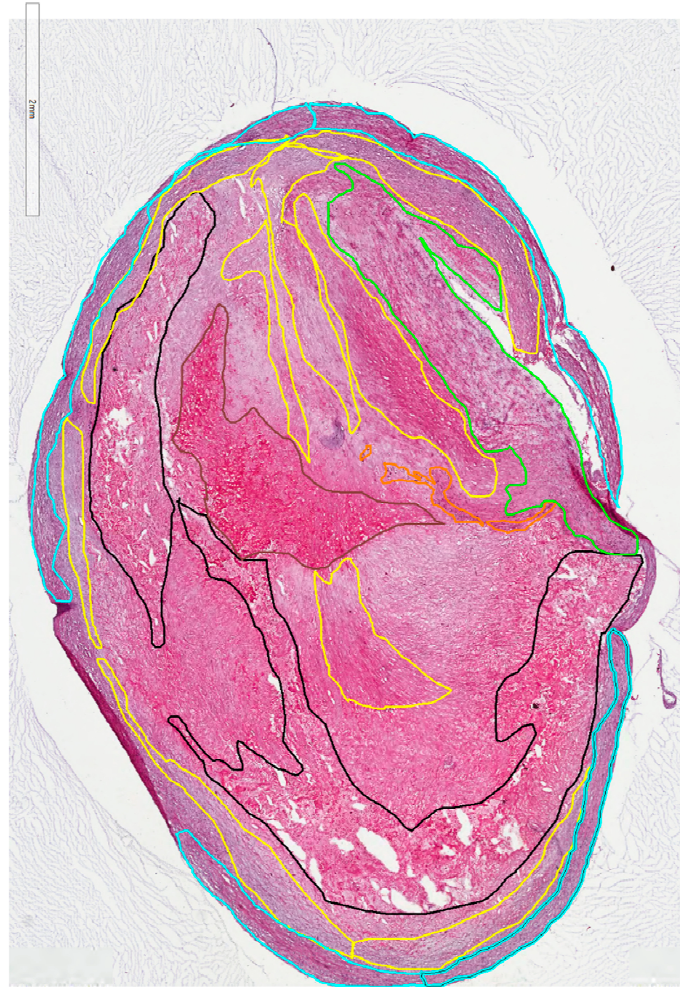


Figure S6. Annotated histological image of Patient 6.

Presence of the different regions in the plaques

Table S1. Presence of the different regions in the plaques.

Patient	1	2	3	4	5	6
Macrophages	X	X	X	X	X	X
VSMCs Inner	X	X	X	X	X	X
VSMCs Outer	X	X	X	X	X	X
Lipid-necrotic core	X		X	X	X	X
Collagen	X	X	X	X	X	X
Hemorrhage	X		X	X	X	X
Calcification	X				X	