



Figure S1 The schematic diagram of manual and automatic segmentation. (A) Manual segmentation diagram; (B) automatic segmentation diagram. Manual segmentation diagram software used ITK-SNAP (ITK-snap v.3.6.0, www.itksnap.org).

Table S1 The built-in function of Matlab image processing toolkits

Matlab function	Description
Otsuthresh	Computes a global threshold T from histogram counts
Imbinarize	Creates a binary image
Imerode	Erodes the binary image
Bwconncomp	Computes the connected components in the binary image
Bwperim	Find perimeter of objects in binary image
Regionprops	Measure properties of image segmentation regions

Table S2 IoU for automatic and manual segmentation

ID	Area	HC	CT value	IoU
100434	235.2294259	54.63482227	231.2670659	0.937279549
101652	212.4209017	51.82365511	205.6247417	0.943313722
103022	238.5131715	55.13717923	156.1267024	0.913737234
106420	209.6066713	51.69372353	213.4547482	0.936011289
107909	238.3226049	54.82854063	157.8132008	0.93592122
108025	222.528647	53.21725791	143.9216496	0.925378936
108038	254.7163143	57.17223635	182.6967336	0.916655704
108067	249.6827072	56.62169953	169.1432652	0.92729985
108143	217.4139777	53.27409382	115.7944284	0.955479711
108539	213.4359944	52.45164176	113.9499233	0.930215077
108893	235.4966681	54.88211739	134.1399536	0.963593629
108917	222.3116931	55.03362408	187.6061253	0.916185822
109437	207.4120305	51.17643864	133.3972212	0.922616489
111887	191.1196712	49.45320332	130.3826922	0.941361953
112426	249.4481632	56.33688522	138.7411017	0.937372133
114178	224.6970618	53.55490422	146.0388891	0.935239008
115351	216.6311447	52.46496843	137.8463451	0.912845285
115750	228.9346496	55.7125203	167.1628251	0.938344906
117124	226.0646606	53.61414141	184.8654336	0.936142707
118214	216.1429099	52.76247299	160.0462983	0.925106427
73236	215.6291022	52.521675	163.1829102	0.947971438
80967	210.6414795	51.53988281	121.1563179	0.934774516
88568	238.0468551	54.93943945	190.0891825	0.914513565
90619	218.1581409	52.59176995	194.8105564	0.944616308
92368	251.2158544	56.38776782	171.8879451	0.917890583
95248	227.4594362	53.61628114	200.8641126	0.939316282
97933	210.1919883	51.68512979	164.3800277	0.944680851
99308	211.2344725	51.92302029	142.8295107	0.926335975
99481	231.0309429	54.06940591	169.5942259	0.930822549
99914	274.8647498	58.91149327	153.3557636	0.918181421
Average				0.932306805

IoU, intersection over union; HC, head circumference; CT, computed tomography.

Table S3 Comparison of segmentation efficiency metrics obtained using the approaches suggested by AAPM [2014] (report 220), by Anam *et al.* [2016], Juszczak *et al.* [2020] and by our method

Method	Average IoU
AAPM report 220 (AAPM, 2014)	0.9320
Anam <i>et al.</i> [2016]	0.9269
Juszczak <i>et al.</i> [2020]	0.9752
Our method	0.9323

AAPM, The American Association of Physicists in Medicine; IoU, intersection over union.