**The radiomics features:**

1. ***Wavelet (LLH)\_Firstorder\_Mean***

The convolution was performed with a low-/low-/high-pass “Coiflet 1” wavelet filter along the x-/y-/z- direction, separately, and a new image was obtained by filtering the original image. Then, the average gray level intensity in the ROI was calculated to describe the mean distribution of voxel intensity, thus reflecting the severity of inflammation in the entire sinus region.

Where, represents the original image, represents the new image obtained by filtering, , , represent wavelet filter.

GLCM describes the second-order joint probability function of an image region constrained by the mask and IMC2 assesses the correlation between the probability distributions to quantify the complexity of the texture, using mutual information.

Where, is the number of discretised grey levels present in the ROI intensity mask after the , , wavelet filter, element of the GLCM contains the frequency at which combinations of discretised grey levels and occur in neighbouring voxels along direction, and is the row marginal probability of new image obtained by filtering (), is the column marginal probability of .

The minimum was calculated to describe the minimum gray level intensity in the ROI.

Where, represents the original image.

The skewness measures the asymmetry of the distribution of values about the mean value, depending on where the tail is elongated and the mass of the distribution is concentrated.

Where, represents the original image, represents the new image obtained by filtering, , , represent wavelet filter.

The flatness showed the relationship between the largest and smallest principal components in the ROI shape, which was closely related to the shape of ROI.

Here, and are the lengths of the smallest and largest principal component axes.

The median was calculated to describe the median gray level intensity in the ROI.

Where, represents the original image, represents the new image obtained by filtering, , , represent wavelet filter.

The mean was calculated to describe the average gray level intensity in the ROI.

Where, represents the original image, represents the new image obtained by filtering, , , represent wavelet filter.

The maximum was calculated to describe the maximum gray level intensity in the ROI.

Where, represents the original image.

The mean was calculated to describe the average gray level intensity in the ROI.

Where, represents the original image, represents the new image obtained by filtering, , , represent wavelet filter.

The IMC2 assesses the correlation between the probability distributions to quantify the complexity of the texture, using mutual information.

Where, is the number of discretised grey levels present in the ROI intensity mask after the , , wavelet filter, element of the GLCM contains the frequency at which combinations of discretised grey levels and occur in neighbouring voxels along direction, and is the row marginal probability of new image obtained by filtering (), is the column marginal probability of .