

# MAGNIFYING COLONOSCOPIC DIAGNOSIS IN LARGE SERRATED POLYPS

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## Background

Warner et al<sup>(1)</sup> first coined the term “large hyperplastic polyps(LHPs)” in 1994 to describe hyperplastic polyps(HPs) larger than 10mm in size. Subsequently, Jass et al<sup>(2)</sup> proposed that “serrated polyps”, may constitute a previously unrecognized pathway to colonic cancer. Jass regarded LHPs and “sessile serrated polyps” as indistinguishable lesions<sup>(3)</sup>. However, in 2003, Torlakovic et al<sup>(4)</sup> highlighted that some right-sided serrated polyps contained more distorted crypts and proposed the term sessile serrated adenoma or polyp (SSA/P).

1) Warner AS, Glick ME, Fogt F. Multiple large hyperplastic polyps of the colon coincident with adenocarcinoma. Am J Gastroenterol. 1994;89:123-125.  
 2) Jass JR, Whitehall VI, Young J, et al. Emerging concepts in colorectal neoplasia. Gastroenterology 2002;123:862-876  
 3) Jass JR. Serrated adenoma of the colorectum and the DNA-methylator phenotype. Nat Clin Pract Oncol. 2005;2:398-405.  
 4) Tarlakovic E, Skovlund E, Snover DC et al. Morphological reappraisal of serrated colorectal polyps. Am J Surg Pathol 2003;27:65-81.

## Aim

To analyze the endoscopic and histological features of LSPs including “Traditional Serrated Adenomas(TSAs)”, “LHPs” and “SSA/P”, retrospectively .  
 To evaluate the usefulness of magnifying colonoscopy in the diagnosis of LSPs measuring 10 mm or larger as well as in the differential diagnosis between SSA/P and HP.

## Patients and Methods

A total of 220 LSPs were resected from 196 patients between July 2003 and December 2010. All lesions were classified according to the WHO definition into “TSA”, “SSA/P”, and “HP”. Histologically, lesions were diagnosed as “SSA/Ps” when serrations extended to the crypt base and the crypt bases were dilated into “L-shaped”, “boot-shaped”, or “inverse T-shaped” patterns.  
 SSA/Ps with and without dysplasia were grouped together as “SSA/Ps”.

## Conclusions

Although LHP and SSA/P may be considered almost synonymous lesions, 40% of LHPs were not diagnosed as SSA/P histologically.  
 Magnifying colonoscopy was shown to be useful in the diagnosis of TSA but did not clearly differentiate between SSA/P and HP.

## Results

**Figure 1:** A total of 195LHP lesions were classified according to the WHO definition into 77(39%) HP and 118 (60%) “SSA/P”.

**Table 1:** HPs were most often found in older (mean age 61.3), male individuals whilst “SSA/P” were found in younger patients (mean age 55 yrs). Both “TSAs” and “SSA/Ps” were more likely to be sessile than flat. The reverse was true for HPs which were more commonly flat. A higher proportion of “TSAs” harbored intramucosal cancer (12.0%: 3/25) compared to “SSA/Ps” (3.4%: 4/118 intramucosal cancers, chi-square p=0.1025 ).

**Table 2:** The addition of magnification, increased the diagnostic accuracy from 70% in “TSAs” to 100% as they were found to have characteristic pinecone-like appearance with serration to the crypt edges (we have named these type IVH-type pit pattern to fit within the Kudo’s classification). Both HP and SSA/P were more difficult to distinguish endoscopically.

**Figure 2:** “TSAs” was evenly distributed throughout the colon. “SSA/P” and HPs were more commonly found in the right hemi-colon (84% and 61%).

Figure 1; Pathological diagnoses in LSPs

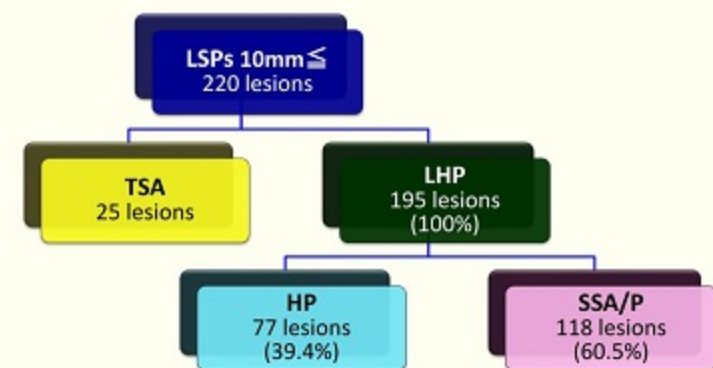


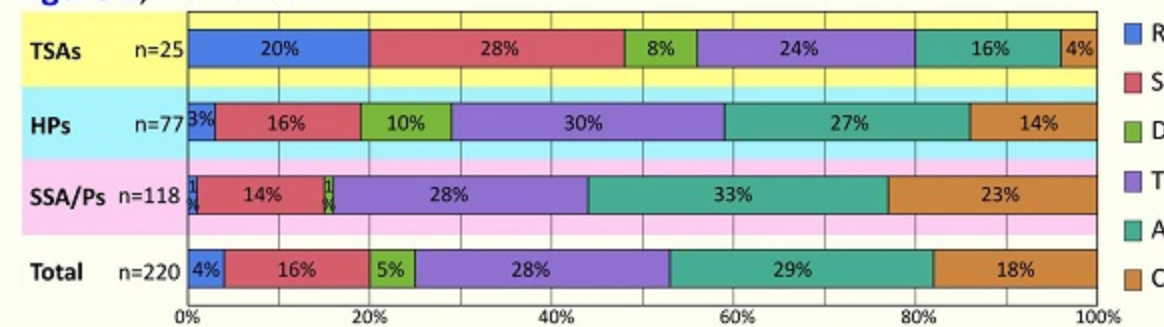
Table1; Clinicopathological features of LSPs

Pathology	Cases (lesions)	Sex ratio (M/F)	Mean Age	Mean Size	Polypoid/Flat	Malignancy (%)
TSA	25 (25)	0.9 (12/13)	60.9yrs	12.5mm	24/1	Intramucosal Cancer: 3 (12.0%)
HP	73 (77)	1.6 (45/28)	61.3yrs	11.2mm	27/50	
SSA/P	98 (118)	1.1 (52/46)	54.9yrs	13.0mm	72/46	Intramucosal Cancer: 4 (3.4%)

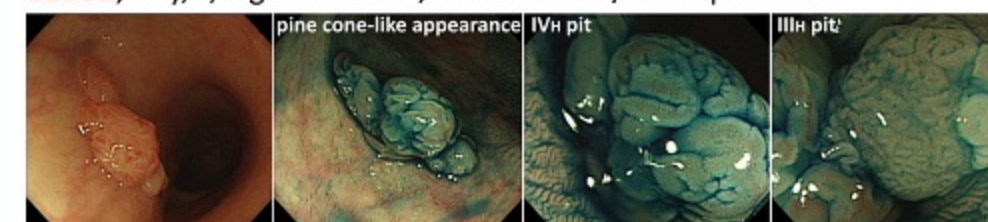
Table2; Accuracy rate of endoscopic diagnosis Conventional vs Magnifying colonoscopy

	Conventional	Magnifying	Total
TSA	9/13 (69.2%)	12/12 (100%)	21/25 (84%)
HP	25/31 (80.6%)	23/46 (50.0%)	58/77 (75.3%)
SSA/P	21/35 (60.0%)	61/83 (73.5%)	82/118 (69.4%)

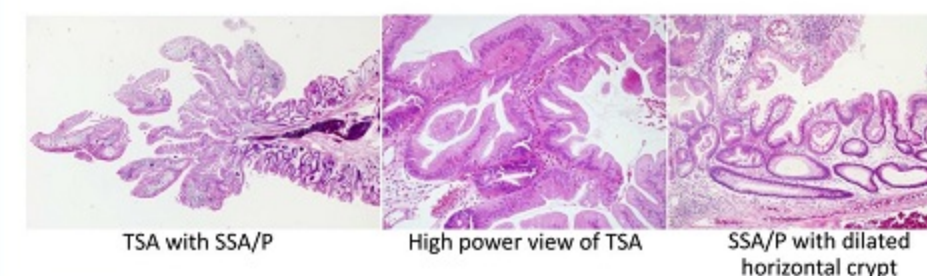
Figure 2; Distribution of LSPs



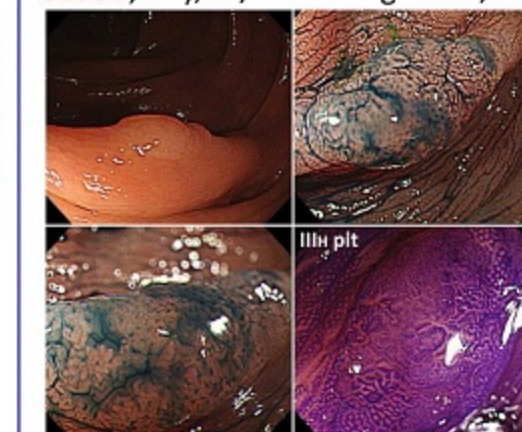
Case1; 75y, F, Sigmoid colon, TSA with SSA/P components



Pinecone-like appearance in chromoendoscopy. Serration around the papillary growth (IVH pit pattern) in magnifying view. The lesion is connected with the flat elevation at the base of the protruded lesion, exhibiting IIII-like pit with serration (IIIIH pit pattern) on the surface.



Case3; 49y, M, Ascending colon, SSA/P

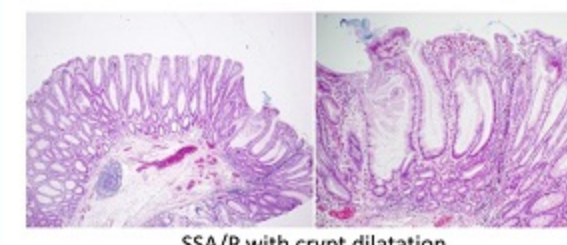


SSA/P was identified with magnifying endoscopy and histological diagnosis

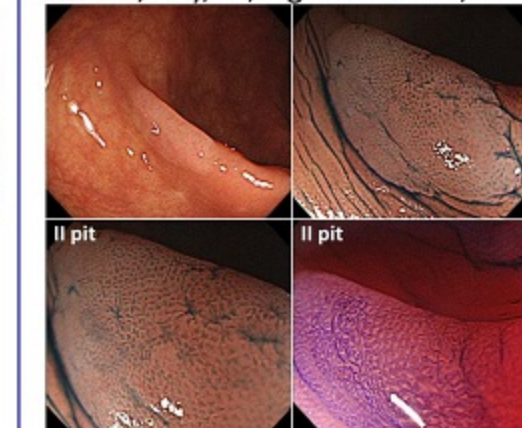
Case 2; 66y, M, Ascending colon, SSA/P



IIII-like tubular pits with serrated changes, i.e., a IIIIH (fernlike) pit pattern, which led to the lesion being diagnosed as SSA/P.



Case 4; 42y, M, Sigmoid Colon, HP



HP was diagnosed with magnifying endoscopy and histological diagnosis