

## ARIAS-STELLA PHENOMENON IN THE DIAGNOSIS OF EARLY INTRAUTERINE PREGNANCY

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### SUMMARY

Arias-Stella phenomenon were described and graded in 100 endometrial biopsies of known early intrauterine pregnancy. Significant changes were seen in 21% of cases. In view of high incidence of Arias-Stella phenomenon in early pregnancy, we suggest its use as a marker for intrauterine pregnancy, whenever this is needed.

### Introduction

Arias Stella in 1954 described the phenomenon of endometrial glands with enlarged nucleus, haphazardly suspended within the clear, swollen cytoplasm. This phenomenon has been associated with extrauterine pregnancy (Frederiksen, 1958); hydatiform mole (Roach et al, 1960), intrauterine devices (Hall et al; 1965) and irregular shedding (Thiery, M. 1955). This phenomenon indicates a hormonal hyperstimulation. Histochemical studies have demonstrated only PAS positive granules which are susceptible to digestion by diastase (Beswich et al, 1971). Electron microscopic studies, however suggest that glandular epithelial cells actively secrete and have a high protein metabolism. According to Dallenbach and Hellweg (1987); Arias Stella phenomenon is present in about 50% of all abortions. The presence of

Arias Stella phenomenon therefore could be used as a marker to diagnose intrauterine pregnancy.

### Material and Methods

One hundred endometrial biopsies obtained during spontaneous abortions in the first trimester of pregnancy submitted for histopathological examination and showing no villi or trophoblast in microscopic examination were selected for present study. The patients age varied from 17 to 40 years. The Arias Stella changes were graded (Lichtig et al; 1988) arbitrarily as follows.

Grade 0: No Arias Stella changes

+ : Moderate increase of mucous secretion in surface or glandular epithelial cells with minimal nuclear hyperchromasia.

++ : More pronounced and more frequent nuclear hyperchromasia and mucous distention of cyto-

plasm of endometrium glandular cells,

+++ : Very pronounced nuclear hyperchromasia with "dysplastic" characteristics in the presence of mucus hypersecretion in cytoplasm of epithelial cells.

### Results

The incidence of Arias-Stella changes were shown in Table I, according to various grades. Out of 100 endometrial biopsies examined; 21 cases (21%) showed the changes. Out of these total 21 cases; 18 showed grade +; whereas 2 (Fig.1) & 1 cases showed grades ++ and +++ respectively.

TABLE I  
INCIDENCE OF ARIAS-STELLA  
CHANGES IN 100 ENDOMETRIAL  
BIOPSIES OF EARLY PREGNANCY  
(No villi or Trophoblast present)

| Grades of Arias-Stella changes | No. of cases | Percentage |
|--------------------------------|--------------|------------|
| 0                              | 79           | 79         |
| +                              | 18           | 18         |
| ++                             | 2            | 2          |
| +++                            | 1            | 1          |

### Discussion

The need for a histologic parameter to prove an intrauterine pregnancy is occasionally required in the Department of Pathology of a general hospital. Curettage material, though frequently contains either chorionic Villi or trophoblastic cells or both, many a times it only shows either secretory endometrium or decidual tissue and we have to decide whether we are dealing with an intrauterine pregnancy or a non-pregnancy case.

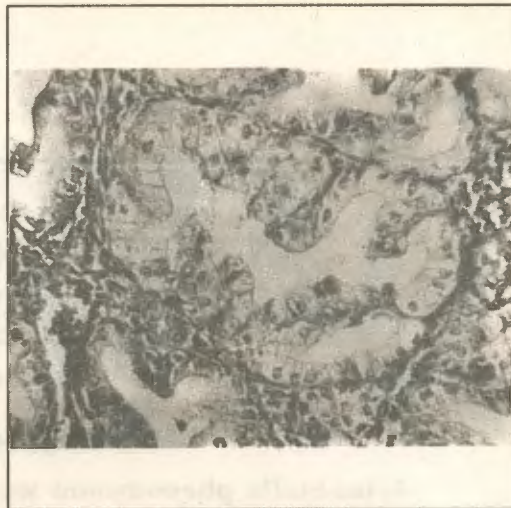


Fig. 1 Arias Stella Phenomenon Grade ++

The problem of differentiating pregnancy decidua from premenstrual decidua in the absence of embryonic elements can be made easier by the finding of Arias-Stella phenomenon; which can be seen in 21% of cases in our study in the decidual tissue, with absence of chorionic and foetal tissue. Therefore, we propose the use of Arias-Stella change in differentiation of pregnancy decidua from non-pregnant endometrium.

### References

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