Thi Thanh Tam Bui, Quoc Thang Pham, Dang Anh Thu Phan, Quoc Dat Ngo, Thi Ngoc Ha Hua, Sao Trung Nguyen

1 Dept. Pathol., Univ. of Med. & Pharm., Ho Chi Minh City.
2 Dept. Mol. Pathol., Hiroshima Univ.

**Background**

The picture of prostatic disease is becoming increasingly complex and showing variety of histopathological conditions. The cribriform architecture is particularly common and represents a broad spectrum of entities, varying from normal histological structures within central zone or benign lesions to premalignant lesions and frank malignancies. As a result, almost general pathologists as well as genitourinary pathologists feel confused about this challenging "grey zone" diagnosis. Especially, cribriform pattern is a key to classified 5 prognostic Grade Groups in prostatic adenocarcinoma according to The International Society for Urologic Pathology and World Health Organization (2014). In Vietnam, there were few studies of prostatic histopathological features, especially, there did not have any research on cribriform lesions of prostate.

**Materials and Methods**

A cross-sectional descriptive study

- **Input criterion:**
  1. Biopsy specimens, ≥ 6 cores.
  2. Pathological results as benign prostatic hyperplasia, prostatic intraepithelial neoplasia or primary prostatic adenocarcinoma.
  3. Must have cribriform lesions microscopically.

- **Eliminative criterion:**
  2. Patients treated.

**Results**

- **General features**
  - The mean age was 74.03 ± 8.79 years (range 43 to 95 years). 85.39% of patients had PSA ≥ 20 ng/ml.
  - The result is similar to study by Takahashi et al over Japanese population and Xueying Mao et al over Chinese population. These studies emphasize that the presence of TMBPSS:ERG fusion and PTEN deletion over Asean population less than European and North American population.

- **Detached cribriform fragments**
  - This feature is one of specific characteristics of prostatic cancer and presented in 83.4% of adenocarcinoma in our study. Especially, majority cases was found in Gleason 4+4 and associated with Gleason score 8-9 ($\chi^2; P<0.001$).
  - The reason leads to cribriform architecture appear “free float” over biopsy cores may be explained by the tumor created giant cribriform mass just had small amount of connective tissue for supporting or adherence.

- **Periacinar halo**
  - 6.9% cases had this feature in our research. Especially, there was a statistical significance between periacinar halo with Gleason score 7 ($\chi^2; P<0.001$).
  - A study of Kruslin et al revealed that p63 marker was negative on all adenocarcinoma glands that had periacinar halo more than 50% perimeter; and spot positive on PIN glands. This suggested that periacinar halo in adenocarcinoma glands had associated with loss of basal membrane.

- **Neovascularity resembling glomus body**
  - This feature presented only in adenocarcinoma (21.4%) with major cases found in Gleason score 4 and associated with Gleason score 8-9 ($\chi^2; P<0.008$).
  - Cells in middle layer of arteries near by cancer had round nuclei, abundant eosinophilic cytoplasm, not clear cell border, with concentric or disorder arrangement similar to glomus body cells, differentiated to smooth muscle tissue and positive with SMA marker.

**Conclusion**

- Malignant cribriform glands should be assigned a Gleason pattern 4, regardless of morphology.
- High grade prostatic adenocarcinoma was always associated with intraductal carcinoma and should be mention on pathological report.
- 3 new features, such as attaching cribriform fragments, periacinar halo and neovascularity resembling glomus body, are very useful clues for pathologists to diagnose adenocarcinoma.